

THE  
ARCHITECT  
& BUILDING NEWS

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JUNE 29, 1951

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ONE SHILLING WEEKLY

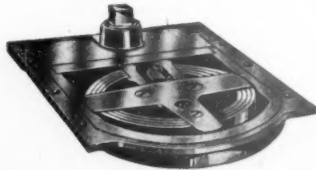


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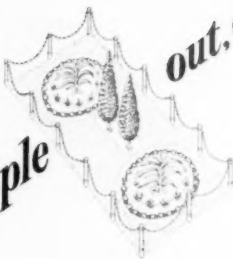
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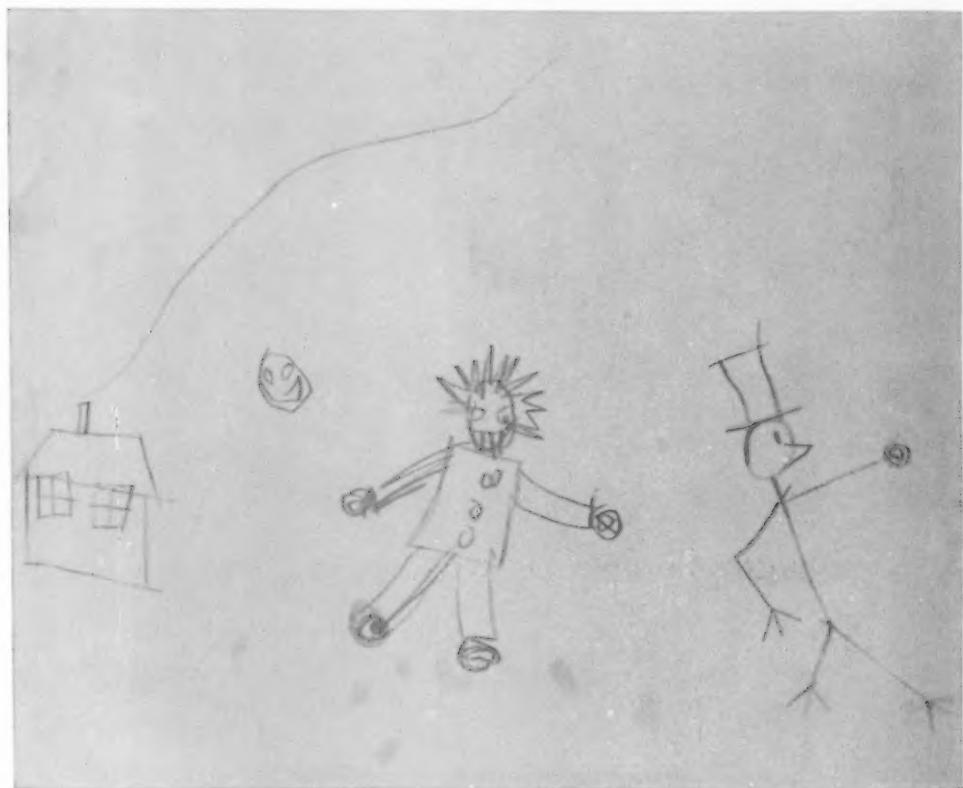
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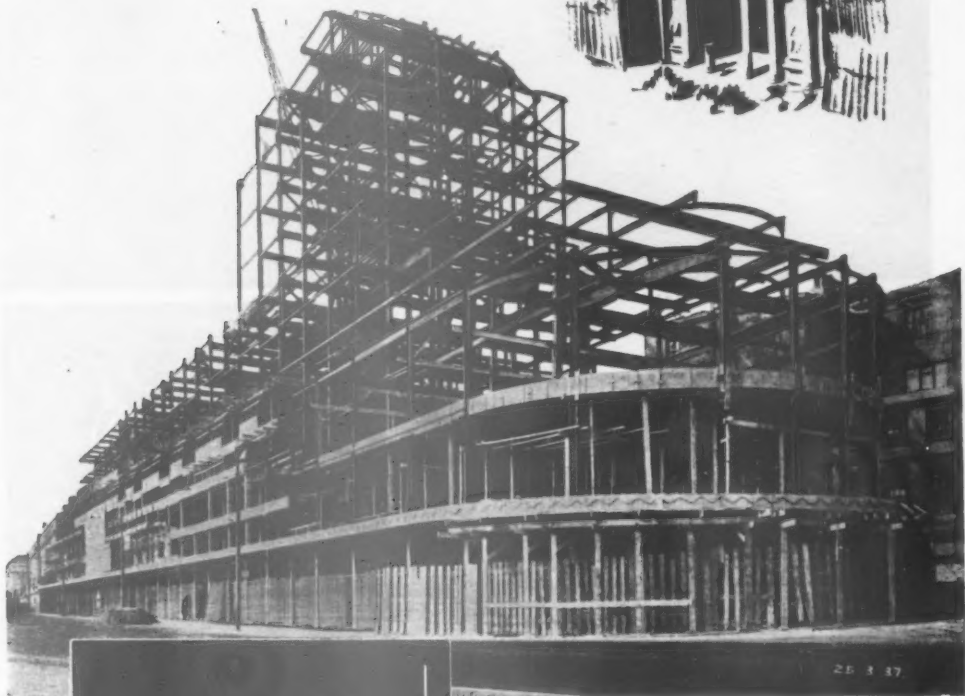
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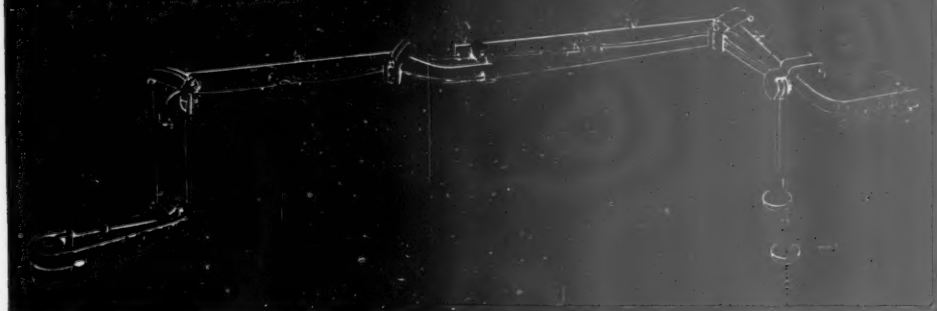
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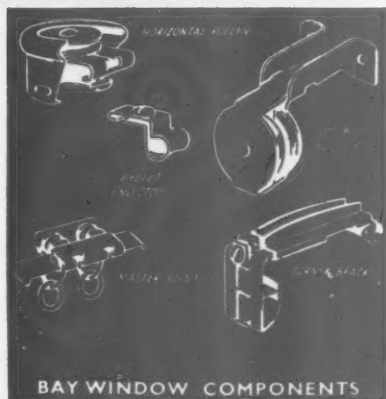
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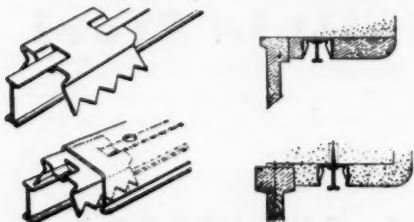
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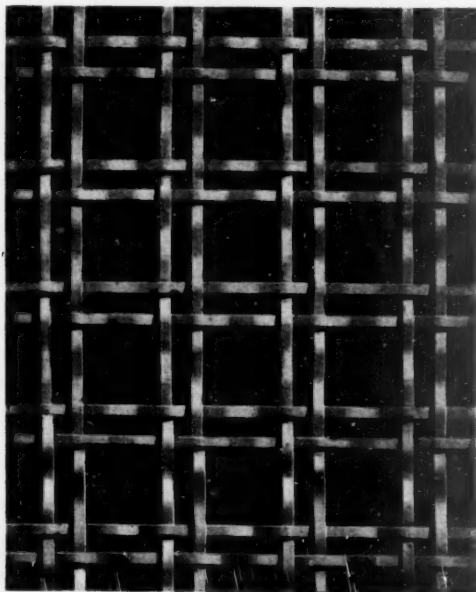
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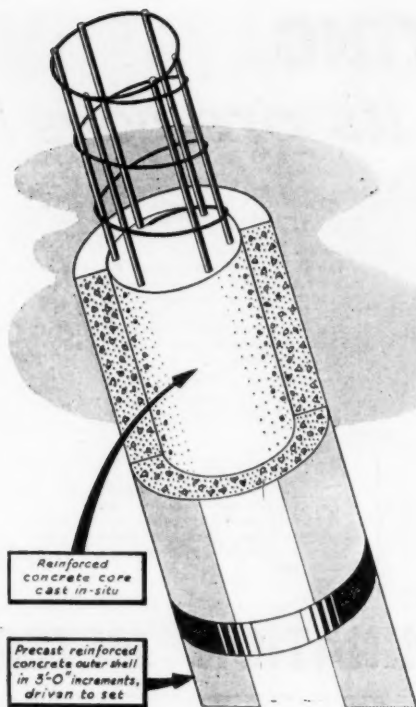
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THE  
**ARCHITECT**  
& BUILDING NEWS

June 29, 1951.

The "Architect and Building News" incorporates the "Architect," founded in 1869, and the "Building News," founded in 1854. The annual subscription, inland and overseas, is £2 15s. 0d. post paid; U.S.A. and Canada \$9.00. Published by ILIFFE & SONS LTD., DORSET HOUSE, STAMFORD STREET, LONDON S.E.1. Telephone: WATERLOO 3333 (50 lines). Telegrams: "ARCHITONIA, SEDIST, LONDON."

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## THE RETURN OF THE CONTROL OF BUILDING

THE Architectural Profession and the Building Industry have taken a knock from the Government this week which may well prove an accumulative set-back for several years to come. As with the rise in cost-of-living, the cause is an assumed necessity, by agreement with other nations, to rearm for some hypothetical future. The immediate result with which we are concerned here is an increased control of building and substantial cuts in civil building.

The Chancellor's proposals can be summarised as a check on all government building, except that directly required for armaments; a complete prohibition of the building of offices not required as an integral part of industrial development and a similar ban on the building of any entertainment building over £5,000. There will be a slight increase in educational building, though for what type of building is not yet stated; housing will be maintained at 200,000 a year, though local authorities may be asked to reduce this output if local conditions so require; the health service and some other local government services must be prepared to do with less.

In spite of all these curtailments of civil building, the output of the constructional industries should rise, it is thought, by about 5 per cent. in the coming year. As most of this and all the work cut out will be pushed into armaments and defence works, it will be seen that expectations of licences for civil building will be considerably reduced. Hints are given that further controls and reductions of supplies may be expected for the years 1952 and 1953.

It is very evident that sweeping decisions of this sort, affecting as they do three or four professions, the largest industry in the country and the general development of the social life of the people, should be subject to close scrutiny. The demand already made from all sides of the Commons for a debate on the

subject, based on more than the Chancellor's statement (e.g., through an informative white paper), is natural and should receive support from the professions and the industries concerned.

To cut, prohibit and control are not the only ways to secure economy and greater production. For example, in steel construction, what moves are being made to co-ordinate codes with those of other countries in order to reduce high cost and safety factors here? Or, alternatively, to suggest a dual code to suit both permanent and temporary buildings? The building industry is not turning out the volume of work it should owing both to inefficient organisation and distribution and to the impact of out-of-date regulations, codes and byelaws. Why not start at that end as well?

Definition of an "office building" may be fairly simple, but what is an "entertainment building"? Into what category does a community centre or an assembly hall come? Many uses of this type of building can be classed as educational and many towns have no public meeting facilities at present. Are these to be prohibited because a hall may be used or let sometimes for "entertainment"? Is entertainment to be defined as that which pays entertainment tax? Come, Mr. Chancellor, let us know the worst or the best! You might tell us also why the limit of £5,000 has been imposed; is it to enable all the pin-table and amusement arcade promoters to get busier and expend valuable building money on conversions in every seaside town and market place? And that at the expense of fewer and more worthy community centres and similar buildings?

Who has examined the relation—to the present output of solid building—of the amount of money and materials used in the petty alterations and decorations (many quite unnecessary and most unlicensed)

going on throughout the country? There are some 60,000 "one-man" firms doing this work and some 40,000 firms employing from one to five operatives helping in it; that is the measure of the man-power factor in this relationship between real productive work and the vast mass of frittering that now happens everywhere.

So far we have said nothing about the direct effect of these cuts on the professions; in any case, all architects, surveyors and planners must feel the draught indirectly—but there must be very direct effect on all those younger men and firms who by considerable hard work and expenditure of money have just managed to get more or less on to two feet during the short six years since the war. What are they to do when all sorts of building is held up and new work, even on paper, is not forthcoming from cautious clients? Do they close down and cut their

losses on offices, staff, equipment and other commitments or do they sit around awaiting something better to turn up or for the final inevitable direction into uniform or into the government departments from which many have so recently escaped? It is a serious matter for the country to break up these organisations; better if the government and local authorities kept them going by sharing out work from some of their overcrowded and overworked technical departments.

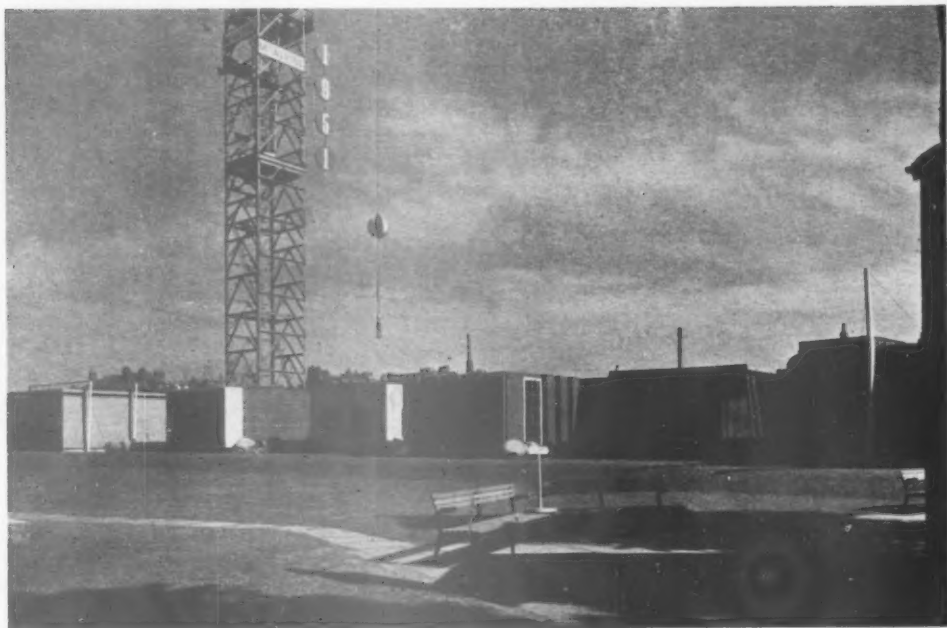
Efficiency and high output cannot be achieved by controls that leave skilled people idle or half-occupied; better to organise and integrate within the present network of practice. Builders and the professional organisations should bestir themselves in this grim matter of the return of war-time controls. Consultation might, even, produce more than imposed rule.



## R O U N D   L A N S B U R Y   W I T H   A B N E R

Plenty of flags with a background of trees. Tickets are bought at the circular kiosk. The bookstall and information office is in the shadow on the left.





A general view of the building research pavilion. Each bay expresses externally what goes on inside. The steelwork on the left is the base of a tower crane which is used as a vertical feature.

## EVENTS AND COMMENTS

### CIAM

THE eighth in the series of *Congres Internationales d'Architecture Moderne* is being held at High Leigh, a country house near Hoddesdon, Herts, from July 7 to 14. The Congress is being organised by the MARS Group, which is the English group of CIAM. The subject of the Congress is "the Core," by which is meant the nucleus of a town or village without which no community is complete. This subject was chosen by the MARS Group because it was felt that large numbers of housing estates are being built in this country and elsewhere with no community services and merely as dormitory areas for large towns. The Congress will attempt to define the requirements of "Cores" for towns of various sizes and each national group will submit examples of work being done, or projected, to solve this particular problem in countries as far apart as Peru and Norway. Some seventeen countries will be represented by delegations and in all about a hundred and forty people will be attending the Congress. It is hoped that the following will be there: Professor Walter Gropius, M. Le Corbusier, Ernesto Rogers, Professor Serge Chermayeff, Marcel Lods, Alfred Roth, Dr. Siegfried Giedeon, J. J. Honegger, and J. L. Sert, who is the President of CIAM and who will be in the chair. Apart from the work at Hoddesdon, delegates will make a number of tours and will visit the South Bank Exhibition. I have been asked to say that the Congress is only open to members of the MARS or other CIAM groups and that all living accommodation at the conference house is already

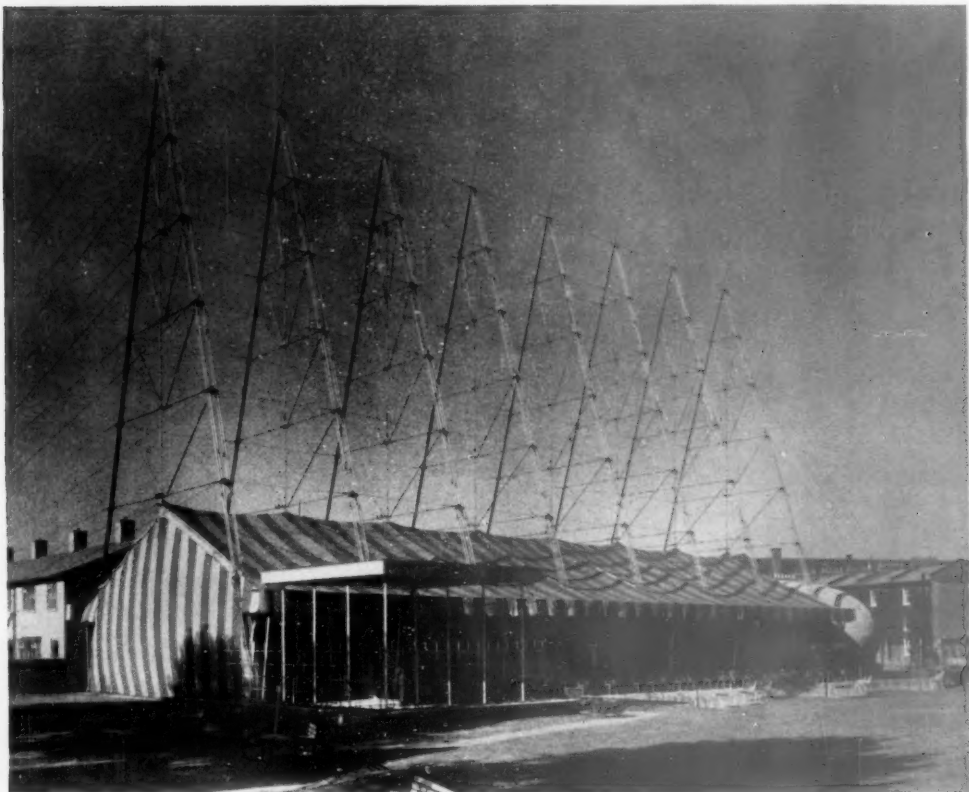
fully booked. The final session of the Congress will be devoted to architectural education and will be held at the R.I.B.A. on Saturday afternoon, July 14, at 3 p.m. This session will be open to students. The principal speaker will be Ernesto Rogers.

### LONDON ARCHITECTURE BRONZE MEDAL

THERE will be loud applause at the decision of the R.I.B.A. London Architecture Bronze Medal Committee to award the medal for the three years ending December 31, 1950, to the Westminster City Council's Housing Scheme at Pimlico, designed by Powell and Moya. These young men were given their chance and have now received the just reward of their skill in making a real contribution to the architecture of London. I remember the head-wagging of some senior architects when the results of the competition were announced. Well done, Powell and Moya!—but I do not forget the Westminster City Council, who had the original idea of a competition.

### ARK, ARK

AN official announcement from the Royal College of Art says that the publication of the third issue of their remarkably *soigné* magazine *Ark* is held up by the sudden illness of the Editor. The announcement says that the College considers the magazine to be worthy of their full support and is taking over the management



*The town of tomorrow, diorama in the Town Planning Pavilion. In my remarks last week I quite forgot to mention an excellent mural in the introduction to the Town Planning Pavilion by Stephen Bone.*



L A N S B U R Y





Left: One of the small but very attractive pieces of planting in the external bays of the Research Pavilion  
Right: Now familiar, but nevertheless worth another picture, Roca chairs outside the Town Planning Pavilion



The 'Rosie Lee' cafeteria. Gay and airy, this restaurant has a fine brown tea pot several times life size as its mascot. It can be seen behind the custodian on the left.

of the paper for the time being. The third issue will nevertheless be postponed until the late autumn.

Not quite by the same post but from the same source or nearly, the Editor of the *A. & B.N.* received a letter pointing out that my statement, in this column, of June 8, concerning Professor Basil Ward, was incorrect. The Royal College of Art does not train architects, but the Professor of Architecture is concerned with providing a basic training in the appreciation of architectural form

and history for students who are training to be artists or industrial designers. The College and the A.A. School are not therefore rivals in any sense of the word.

#### THE GLASS OF FASHION AND THE MOULD OF FORM

**V**ISITORS to the South Bank Exhibition one evening last week may have been surprised to see so many tuxedoed men and elegantly appalled women circulat-

ing in the grounds. They might have been even more surprised if they had known that these were the architects of the exhibition and their ladies. As mentioned last week, the occasion was a party given by the Architecture Club in the Royal Festival Hall to the architects of the South Bank Exhibition.

#### THE CANTERBURY EXHIBITION

**L**ARGELY volunteer labour working almost without break for the last 48 hours, managed to complete the Canterbury Exhibition in time for the opening by M. Massigli, the French Ambassador. I reported on its progress some weeks ago and, having seen it finished, I still urge you to see it if you can. The exhibition succeeds for a number of reasons, first of which is undoubtedly an excellent natural site skilfully adapted to provide an interesting circulation plan. The story is well and simply told with the aid of the minimum number of captions; in one or two places there are, in fact, too few. The murals, and in particular those used to illustrate the story of Augustine, are lively and amusing and most skilfully done. A view of mediaeval Canterbury by a student of the art school is outstanding.

Inevitably there has been much opposition in the city to this exhibition, and some absurd letters from normally responsible people have appeared in the local papers.

The Mayor, Councillor Stanley Jennings, has been the driving force behind the exhibition, and he and his helpers, both official and voluntary, have accomplished something which would do credit to a city ten times the size of Canterbury. Although the production of the exhibi-



Mr. Peter A. S. Benton writes "In view of Abner's remarks about students being too serious today, I am enclosing a photograph of the Brixton students putting the 'K' in Kulture during the recent Lambeth Festival Week procession."

tion was essentially a team effort, the City Architect, Mr. L. H. Wilson, A.R.I.B.A., and the Principal of the College of Art, Mr. A. Moody, A.R.C.A., were the ring-leaders and should be specially mentioned.

ABNER

## NEWS OF THE WEEK

Under the auspices of the MARS Group, Professor Gropius has accepted an invitation to give a talk at the R.I.B.A. on Monday, July 2, at 6 p.m.

Professor Gropius is also going to speak informally to students only at the Architectural Association on Thursday, July 5.

★ The Jury entrusted by the Royal Institute of British Architects with the award of the London Architecture Bronze Medal have made their award for the period of three years ending December 31, 1950, in favour of the Westminster City Council's Housing Scheme at Pimlico, of which two blocks of flats were completed during 1950. The scheme was designed by Messrs. A. J. P. Powell & J. H. Moya, A.A.R.I.B.A.

★ On Wednesday, June 20, the Architecture Club entertained at a Buffet Supper at the Royal Festival Hall the Architects responsible for the design of the Festival Exhibitions in London. Viscount Esher presided and the supper was attended by 200 members and guests.

★ A resolution that a London architect be asked to prepare sketch drawings of Stafford's proposed civic centre and office accommodation at Tenterbanks was passed at the Town Council meeting on Tuesday after a proposal that the matter be referred back had failed.

Mr. B. Sinkinson said they wanted to prepare for the time when they could go ahead with the centre. Architect's fees would be less than £1,500.

★ Mr. Hugh Dalton, Minister of Local Government and Planning, has ap-

pointed Sir Thomas Bennett, C.B.E., F.R.S.A., F.R.I.B.A., to be Chairman of the Stevenage Development Corporation in succession to Mrs. Monica Felton.

Sir Thomas Bennett will also continue as Chairman of the Crawley Development Corporation, a post which he has held since February 26, 1947.

★ Mr. Derek W. Plumstead, A.R.I.B.A., Town Planning Officer for Edinburgh, handed in his resignation from that post at a meeting of the Planning Committee of Edinburgh Town Council on June 20.

In a letter to the Town Clerk, Mr. Plumstead wrote: "After careful consideration of all the facts which have caused and continue to cause the delay in the preparation of the Development Plan, timeously I have decided not to associate myself with the responsibility of its preparation. I wish, therefore, to tender my resignation from the post of Town Planning Officer."

The Committee accepted Mr. Plumstead's resignation, and appointed a sub-committee to consider the matters arising from it.

Mr. Plumstead, who is 39 years of age, has been Edinburgh's Planning Officer since 1945.

After the meeting Mr. Plumstead declined to comment on his resignation.

*The Architect and Building News will be published in future on Thursdays instead of Fridays to ensure that readers in all parts of the country receive their copies well before the week-end.*

It is understood that he intends to take up private practice as a town planning consultant in Edinburgh and London. His resignation will take effect in about three months.

The Architects' Registration Council of the United Kingdom announce that the name of Edward Allen Burne has been removed from the Register of Architects and that he has been disqualified from registration for a period of three years from June 22, 1951.

Mr. Burne is architect to the Penrith Rural District Council, and was permitted by his employers to engage in private practice. The Discipline Committee of the A.R.C.U.K. in their report to the Council stated that Mr. Burne, in receiving the sum of £45 from a builder in respect of work which had been entrusted to him as architect, was guilty of conduct disgraceful to him in his capacity as an architect.

#### OBITUARY

The death has been announced on June 26 of Mr. Claude St. J. G. Miller, A.R.I.B.A., at Haywards Heath.

#### APPOINTMENT

Mr. D. A. Birchett, A.R.I.B.A., has been appointed Architect to Shell-Mex and B.P. Ltd.

#### COMING EVENTS

A.A.  
● July 5th, at 8 p.m. "The Architecture of North Africa." Speaker: G. E. Kidder Smith.

A.B.T.  
● July 6th, at 6.30 p.m. In the Alliance Hall, Caxton Street, S.W.1. "The Lansbury Scheme." Speaker: Arthur Ling. Visitors welcome.

## "Living Traditions" Exhibition

"Living Traditions," the Festival Exhibition of Scottish Architecture and Crafts, which opened on June 25 in the Royal Scottish Museum, Chambers Street, Edinburgh, is described by Mr. R. A. Maclean, Chairman of the Council of Industrial Design Scottish Committee, in a foreword to the Catalogue, as "without doubt the finest Exhibition of Scottish Architecture and Crafts, both traditional and contemporary, that has ever been assembled."

Sir Frank Mears, F.R.I.B.A., M.T.P.I., is Vice-Chairman of the Exhibition Committee, and Chairman of the Scottish Advisory Panel on Architecture and Planning. The Exhibition manager is Mr. E. B. Pinder Davis; the Designers, Mr. Robert Nicholson, M.S.I.A., and Mr. Roger Nicholson, A.R.C.A.; the architectural assistant, Mr. P. R. Whiston, A.R.I.B.A.; and the theme writer, Mr. George Scott-Moncreiff.

The exhibits, which have been gathered from all parts of the country, and include one lent by His Majesty the King, exceed in value half a million sterling, apart from those that are beyond valuation.

The Exhibition's range extends from the earliest times to the present day, but the exhibits are not arranged in arbitrary periods. Strict chronology has been disregarded by the designers in their arrangement. By showing together Scottish architecture and pieces of Scottish craftsmanship they have explained the interdependence of architecture and craftsmanship and the fundamental continuity of Scottish traditions.

Demonstrations are given by numerous craftsmen. A string orchestra renders traditional tunes of the Lowlands, and a girl sings Gaelic songs of the Highlands.

In quite a small area a sense of spaciousness has been achieved, the exhibits being displayed in a manner appropriate to their Scottish background and character.

They have created their effects within each section of the Exhibition, not by employing strongly-contrasting colours but by producing a number of tonal variations on a single colour so that the Exhibition is divided not by arbitrary labels or names, but by separate colour areas.

There are numerous photo-enlargements and drawings, and a few models of buildings under construction. There are groups of buildings in simple settings—a Highland cottage, a Lowland farmstead, a new school, and a home for old people. There is a group of characteristic farm buildings, a medieval tolbooth, a Georgian terrace, a modern range of flats, a health centre, a modern colliery, a hydro-power dam, light-houses and bridges. An interesting contrast of formal and free architecture is the exhibiting in juxtaposition of Edinburgh's renaissance "new town" plan and the central area plan for a contemporary Scottish new town.

There can thus be compared throughout the ages the character of Scottish architecture in all its periods, phases and types.

## R.I.B.A. COUNCIL, 1951—1952

### President:

Henderson, A. Graham, A.R.S.A. (Glasgow).

### Past Presidents:

Goodhart-Rendel, Harry Stuart.  
Waterhouse, Michael T., M.C.

### Vice Presidents:

Paxton, Norval R., M.C. (Leeds) (Chairman of the Allied Societies' Conference).

(Three to be appointed by the Council on July 3, 1951).

### Honorary Secretary:

(To be appointed by the Council on July 3, 1951).

### Honorary Treasurer:

(To be appointed by the Council on July 3, 1951).

### Members of Council:

Aslin, C. H., C.B.E. (Hertford). Bain, Victor (Leeds). Bennett, Hubert (Leeds). Casson, Hugh M., M.A. Chitty, Anthony M., M.A., A.M.T.P.I. Clarke Hall, Denis. Easton, J. Murray. Enthoven, R. E. Fairhurst, P. G., M.A. (Manchester). Holford, Professor W. G., M.A., M.T.P.I. Howitt, Leonard C., B.A.R.C.H., A.M.T.P.I. (Manchester). Howitt, T. Cecil, D.S.O., O.B.E. (Nottingham). Knapp-Fisher, A. B., F.S.A. Pierce, S. Rowland. Sheppard, Richard H. Stillman, C. G. Wornum, G. Grey. Yorke, F. R. S.

### Associate Members of Council:

Brett, Hon. Lionel Gordon Baliol, M.A. (Oxford). Brown, Professor R. Gordon (Hong Kong). Cadbury-Brown, H. T. Livett, R. A. H., O.B.E. (Leeds). Matthew, R. H. Sheppard, Peter F., B.A.R.C.H., A.M.T.P.I. Tubbs, Ralph. Uren, R. H. Womersley, J. Lewis (Northampton).

### Licentiate Members of Council:

Goodman, Stanley Vincent (Bedford). Wakeford, F. C. (Hentsridge, Somerset). Whitehouse, S. Lunn (Birmingham).

### REPRESENTATIVES OF ALLIED SOCIETIES IN THE UNITED KINGDOM OF THE IRISH FREE STATE

#### (1) Six Representatives from the Northern Province of England:

Newcombe, P. Clive, F.R.I.B.A. (Northern Architectural Association). Young, William Cecil, F.R.I.B.A. (Manchester Society of Architects). Ormerod, F. J. M., F.R.I.B.A. (Liverpool Architectural Society). Rowntree, Colin, F.R.I.B.A. (York and East Yorkshire Architectural Society). Horsfall, C. E., L.R.I.B.A. (West Yorkshire Society of Architects). Cawkwell, Robert, F.R.I.B.A. (Sheffield South Yorkshire and District Society of Architects and Surveyors).

#### (2) Five Representatives from the Midland Province of England:

Cox, G. B., F.R.I.B.A. (Birmingham and Five Counties Architectural Association). Herbert, Anthony E., A.R.I.B.A. (Leicestershire and Rutland Society of Architects). Dunham, P. B., F.R.I.B.A. (Northamptonshire, Bedfordshire and Huntingdonshire Association of Architects). Cartwright, T. N., D.S.C., F.R.I.B.A. (Nottingham, Derby and Lincoln Architectural Society). Sandon, E. C. R., A.R.I.B.A. (East Anglian Society of Architects).

#### (3) Six Representatives from the Southern Province of England:

Powell, J. A., F.R.I.B.A. (Devon and Cornwall Architectural Society). Cole,

Lieut.-Col. Eric, F.R.I.B.A. (Wessex Society of Architects). Maunders, F. A. C., F.R.I.B.A. (Berks, Bucks and Oxon Architectural Association). Thomas, R. A., F.R.I.B.A. (Hampshire and Isle of Wight Architectural Association). Lumley, D. F., A.R.I.B.A. (Essex, Cambridge and Hertfordshire Society of Architects). One representative to be nominated by the South-Eastern Society of Architects.

#### (4) Four Representatives of Allied Societies in Scotland: nominated by the Council of the Royal Incorporation of Architects in Scotland:

Cordiner, T. S., F.R.I.B.A. (Glasgow). Cullen, Lieut.-Col. Alexander, O.B.E., T.D., F.R.I.C.S., F.R.S.E., M.T.P.I., F.S.A. SCOT., F.R.I.B.A. (Inverness). Hutson, Lockhart W., O.B.E., F.R.I.B.A. (Hamilton). Kininmonth, W. H., F.R.I.B.A. (Edinburgh).

#### (5) One Representative of Allied Societies in Wales:

Bishop, J. W., A.R.I.B.A. (South Wales Institute of Architects).

#### (6) Two Representatives of Allied Societies in Ireland:

McArdle, Francis, M.S.C., B.E., M.I.C.E.I., F.R.I.B.A. (Royal Institute of the Architects in Ireland). Gibson, R. H., F.R.I.B.A. (Royal Society of Ulster Architects).

### REPRESENTATIVES OF SOCIETIES IN ALLIANCE WITH THE ROYAL INSTITUTE OVERSEAS

Hazelgrove, A. J., F.R.I.B.A. (The Royal Architectural Institute of Canada). Sullivan, L. Sylvester, F.R.I.B.A. (Representative in the United Kingdom). Cheesman, Jack Denyer, F.R.I.B.A. (The Royal Australian Institute of Architects). Howitt, Thomas Cecil, D.S.O., O.B.E., F.R.I.B.A. (Nottingham). (Representative in the United Kingdom). Draffin, M. K., M.C., F.R.I.B.A. (New Zealand Institute of Architects). Uren, R. H., A.R.I.B.A. (Representative in the United Kingdom).

(To be appointed) (The Institute of South African Architects). (To be appointed) (Representative in the United Kingdom). (To be appointed) (The Indian Institute of Architects). (To be appointed) (Representative in the United Kingdom).

### REPRESENTATIVE OF THE ARCHITECTURAL ASSOCIATION (LONDON)

Anderson, Alexander Robert Fordyce, F.R.I.B.A.

### REPRESENTATIVE OF THE ASSOCIATION OF ARCHITECTS SURVEYORS AND TECHNICAL ASSISTANTS (NOW THE ASSOCIATION OF BUILDING TECHNICIANS)

Campbell, Kenneth John, A.R.I.B.A. CHAIRMAN OF THE BOARD OF ARCHITECTURAL EDUCATION Cross, Kenneth Mervyn Baskerville, F.R.I.B.A.

### CHAIRMAN OF THE R.I.B.A. REGISTRATION COMMITTEE:

Poulton, Denis, F.R.I.B.A.

### TWO REPRESENTATIVES OF THE R.I.B.A. SALARIES AND OFFICIAL ARCHITECTS' COMMITTEE

(To be appointed).

### CHAIRMAN OF THE R.I.B.A. ALLIED SOCIETIES' CONFERENCE

Paxton, Norval R., M.C., F.R.I.B.A. (Leeds.)

## Technical Appendices to the Housing Manual, 1949

The companion volume to the latest "Housing Manual," now published,\* brings up to date and expands the information useful to builders, architects, engineers and housing authorities, which was given in the Technical Appendices to the 1944 Manual.

The new volume seeks to establish a minimum code of good practice in the construction of all types of dwellings. It sets out some of the results of the considerable work undertaken in building research and of the wide experience of building techniques gained in the short period that has elapsed since the publication of the "Technical Appendices to the Housing Manual 1944." It has been compiled by the Ministry of Works with the close collaboration of the Ministry of Health (whose functions now come under the Ministry of Local Government and Planning), the Building Research Station of the Department of Scientific and Industrial Research, and the Ministry of Fuel and Power.

Functional standards desirable for dwellings are set out in the first Appendix, with particular attention to requirements of strength and stability, durability and maintenance, resistance to moisture penetration and to fire, thermal insulation and exclusion of noise. Various Appendices which follow describe practical ways and means of attaining these standards with economy, both in cost and in the use of materials under the headings: Materials and Construction (foundations, walls and partitions, floors, roofs); Finishes to Walls and Ceilings; Heat Installation; Protection of Plumbing Systems against Frost; Electrical Installations; Small Sewage Disposal Works.

### Foundations and Walls

Various types of foundation are related to the behaviour of different kinds of soil, with notes of simple tests for the properties of soils, and recommendations for the economical design of foundations to suit varying conditions.

Materials for walls are discussed, with special attention to recent developments in lightweight and no-fines concretes. Comparative tables are given of their properties. There are notes of suitable mortars using economical mixes, and of various materials for damp-proof courses. In describing methods of building external walls emphasis is laid on the importance of cavity wall construction in attaining economically the desired standards of weather protection and thermal insulation as well as those of strength and stability. The value of lightweight concretes is stressed in relation to thermal insulation when they are used in the inner leaf of such walls. Notes on the construction of party walls and internal partitions are related particularly to their resistance to fire and to insulation against noise.

\* "The Housing Manual 1949: Technical Appendices," Published for the Ministry of Works and the Ministry of Local Government and Planning, by H.M. Stationery Office, price 2s.

### Floors

Subjects here considered are the protection of solid ground floors from penetration by damp, the construction and treatment of reinforced concrete suspended floors, their resistance to fire and their insulation against noise. Joisted timber floors are discussed in detail, with notes and tables showing economical sizes and spacing of timber. Here, too, fire resistance and sound insulation are considered. This section also includes comparative tables of the properties of various floor coverings.

### Roofs and Timbers

Attention is given to features of the economical construction of timber roofs, with tables of design data for recommended sizes and spacing of timbers for various spans and different types of roof covering. An additional note on the careful use of timber describes methods of making the best use of individual pieces of varying quality, and gives advice on the preservation of timber against dry rot and other decay.

### External Finishes

Notes on external finishes for walls include recommendations for the preparation of the background, appropriate undercoats, protective and decorative finishes and economical cement-lime-sand mixes for various conditions of exposure.

There are similar recommendations for internal work with notes of suitable combinations of undercoats and finishes for plastering, comments on painting, and a table setting out the spread of flame classification of wall and ceiling finishes. Ways are discussed for protecting light steel sections and aluminium against corrosion.

### Heating Installations

The various methods of heating a two-storey house of the local authority type are treated in detail. Examples of calculating heat losses are worked out to show how the most efficient and economical types of appliances can be selected for particular conditions. Notes are given on the installation of all kinds of improved solid fuel appliances and gas and electric appliances for space heating and water heating, their fixing, their flues and air supply. A section discusses various methods of district heating and their possibilities.

There are general notes on electrical installations, and on the protection of plumbing fixtures against frost.

### Sewage

The subject of small sewage disposal works for isolated groups of houses in rural areas is treated in considerable detail. The notes are not intended to replace skilled engineering advice but give general guidance on selection of sites, basic design data and methods of construction. Practical recommendations are given on disposal of effluent by land irrigation and on measures of supervision and general maintenance.

### Building Costs

The Appendix discussing the influence of design consideration on general building costs will arouse interest. It is pointed out that in site works and foundations the aim should be to develop from virgin soil to ground floor level, including ancillary works, with the minimum number of separate operations. Observation showed that,

on comparable sites, these operation varied from as many as twelve to as few as six, with a cost variation from £69 to £44 per house. For solid ground floors it can be cheaper to use one of the more expensive finishes, provided that it covers the whole floor, rather than several small areas of less costly finishes. In suspended floors and in roofs, the relation between timber sizes and spacing and the covering materials used has important effects on economy in both costs and quantities.

Throughout the "Technical Appendices" references are made to relevant British Standards and British Standard Codes of Practice, and lists of these documents are incorporated at the end of the volume. There is a reading list covering all publications mentioned in the text and some other authoritative documents on related subjects.

## CORRESPONDENCE

To the Editor of A. & B.N.

Sir,—May I be permitted to draw the attention of those of your readers, who may be old students of the Polytechnic School of Architecture, to the concert of British Music which is to be given in the Royal Festival Hall on the evening of July 21? This concert, of which you have been kind enough to publish details, is being organised by the Polytechnic Architectural Students Society as their contribution to the entertainment of visiting foreign students of Architecture expected in this country in July. It is felt by all connected with the School that many of our old students who can find it convenient to be in town on that day will like to show their appreciation of the students' enterprise by giving the concert their support. Indeed, it would be most encouraging if architects, who have passed through either the day or evening departments during the past fifty-five years of the School's existence, could make of this important occasion, an opportunity for the renewal of old friendships.

I am, etc.,  
JOHN S. WALKDEN,  
Head of the School.

To the Editor of A. & B.N.

Sir,—I am engaged in writing a book at present, entitled "British Furniture at the Mid-Century and What Led Up to It." A comprehensive range of illustrations will be included, showing the present trend of contemporary design, and the history of its birth and its slow development over the succeeding years.

I am making every effort to give credit to all whose work contributed to the movement. I would be grateful however, if you would allow me through your columns to invite contributions from any firm or individuals who consider that their designs or productions had definite influence on contemporary furniture.

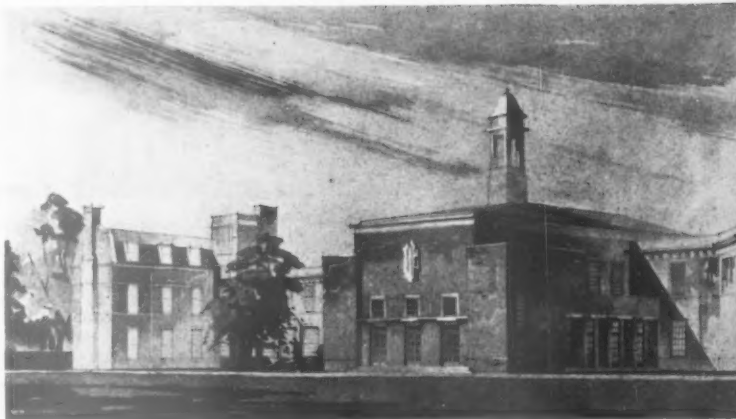
I would welcome photographs with dates and ample descriptions, and would be glad to receive these as soon as possible, but in any case, not later than July 22.

I am, etc.,  
DAVID JOEL.



## BUSHEY

During the last War the Assembly Hall of the Royal Caledonian Schools at Bushey was completely destroyed by fire. Designed by the late Sir William Emerson, P.P.R.I.B.A., the old Hall was a mixture of traditional features, including traceried windows and a high, heavily timbered, open trussed roof of the hammer beam type. The present shortage of timber precludes rebuilding the Hall in its previous form. To comply with fire escape regulations and to provide a hall of greater seating accommodation and of better acoustic qualities is the aim of the design illustrated.



## CAMBRIDGE

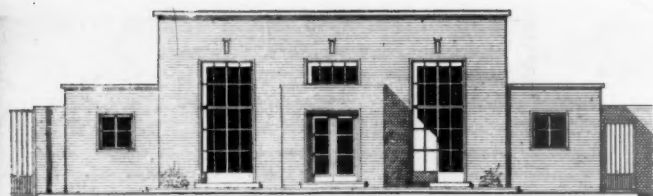
The rapid expansion of the experimental work in Plant Breeding now being carried out in the School of Agriculture—University of Cambridge—made it necessary for the Agricultural Research Council to acquire a site at Trumpington to carry out experiments on a considerably larger scale. The building illustrated comprises large research laboratories and also rooms for individual workers, with special facilities for the collection and recording of data. The proximity of the eighteenth century Anstey Hall determined the choice of materials and the character of the elevations which have received the approval of the County Town Planning Department.

## HARPENDEN

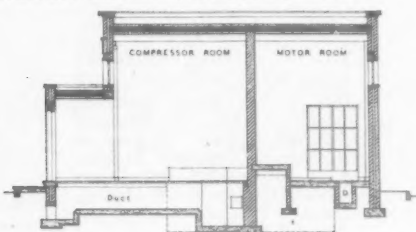
The Experimental Station, Rothamsted, controlled by the Lawes Agricultural Trust, under the direction of Sir William Ogg, M.A., B.Sc., Ph.D., have provided a site adjoining the main laboratory buildings for a Statistic Department, which is responsible for the collection of statistics not only for the Rothamsted Station, but also other research stations in Britain which work in conjunction with the Agricultural Research Council. As a considerable amount of the work is done by commuting machines in small rooms—the provision of sound-insulated floors and partitions is of great importance.



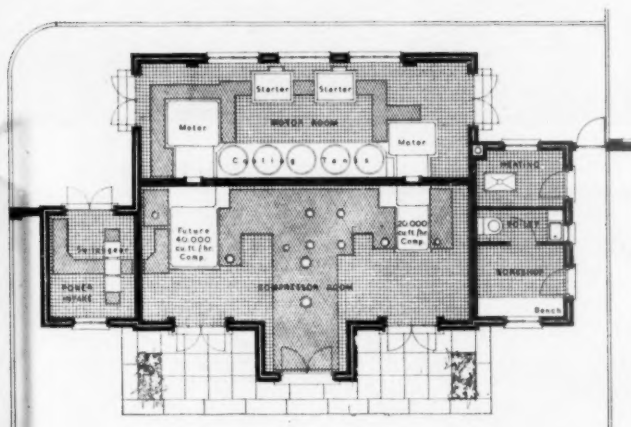
Three projects designed by J. B. F. COWPER, F.R.I.B.A.



ELEVATION TO ROAD

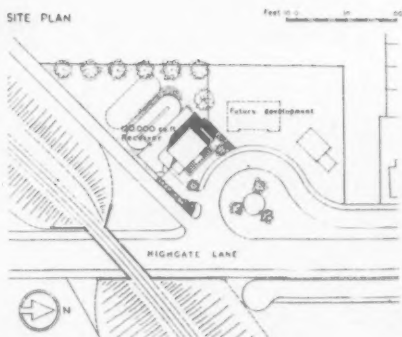


CROSS SECTION



PLAN

SITE PLAN



# COMPRESSOR HOUSE, HIGHGATE LANE, BOLTON-ON-DEARNE



# COMPRESSOR HOUSE, BOLTON-ON-DEARNE, YORKSHIRE

architects:

SHAPLEY AND DAVISON, F/A.R.I.B.A.

THIS building was designed to accommodate plant for the compressing of coal gas for redistribution. After being compressed the gas is stored in 26 ft. diameter high pressure receivers at the rear of the building, at this stage only one compressor set and receiver have been laid down and these were carried out under separate contracts.

The installation, which was commenced prior to Nationalisation, will be operated by the Sheffield and Rotherham Division of the East Midlands Gas Board.

## SITE

Owing to mining in this locality, a site adjoining the Railway was selected in order to minimise the likelihood of subsidence, and in view of this no special precautions were taken.

The remainder of the site has been set aside for future Showrooms, Demonstration Room and Caretaker's House.

Pending the construction of the new service road a temporary approach has been laid down.

## PLANNING

It was necessary to have the Compressor and Motor Rooms adjoining to suit the layout of the plant. The whole of the installation is automatic in operation, thus eliminating the necessity for a full time attendant; a small workshop for maintenance and repair work has been provided.

Special fire precautions have been observed in the Compressor Room—flameproof electric light fittings, gas seals to compressor driving shaft from electric motors, gas and electric services are placed in isolated floor ducts with metal covers.

Lifting joists have been placed over the compressors to facilitate erection and maintenance.

## CONSTRUCTION

Walls: 11 in. brick cavity external walls; 9 in. and 4½ in. brick internal walls.

Roofs: 6 in. and 7 in. deep reinforced concrete hollow beams covered with rock asphalt. Suspended ceilings of ½ in. insulation boards, plaster finish.

Tarmacadam roads and footpaths. York stone steps and paving to Terrace.

Copings, boot lintols, door and window linings of precast stone, Portland finish.

External facing bricks 2½ in. light mixed golden brown with wiped flush joints.

Windows and doors of sheradised metal, windows to Motor Room operated by remote control gear.

Compressor and Motor beds are of mass concrete approximately 5 ft. deep.

Heating by low pressure hot water system with gas fired boiler and hospital type radiators.

Floors and Skirtings of 4 in. by 4 in. Ferrolite tiles, internal window cills red quarry tiles.

External colour scheme: Metal windows and doors, ivory; Wood doors, terra cotta with cream frames; rainwater heads and fall pipes, warm stone; Wrought iron gates, medium grey.

Quantity Surveyor: Rex Procter, F.R.I.C.S.

GENERAL CONTRACTORS: BRAMALL & OGDEN, Wath-on-Deane.



Top picture shows the Compressor Room, the lower picture the Motor Room.



## IN PARLIAMENT

### Airport Designs

Mr. Beswick, Parliamentary Secretary to the Ministry of Civil Aviation, stated in reply to Air Commodore Harvey that the permanent buildings at London Airport will consist of a terminal block in the central area, hangars in two maintenance areas for the British Airways Corporation and other operators and ancillary buildings in the Bath Road area. The designs of the control building, the operations building, and one passenger handling building in the terminal block have been approved and working drawings are nearing completion. It is hoped to start construction work at the beginning of next year. The designs of the hangars for British Overseas Airways Corporation and British European Airways Corporation have been approved and construction has begun. The design of the buildings in the Bath Road area has also been approved and construction will start very shortly. (June 20.)

### Lansbury Lugging

Mr. Arthur Lewis asked the Lord Privy Seal if he was aware that the exhibition, To-morrow, at Lansbury, Poplar, was not proving as successful as it ought to be owing to the lack of publicity and lack of special transport from the South Bank Exhibition by road, rail and river, and whether he would take the necessary action to popularise this Exhibition.

Mr. R. Stokes replied: It is true that this exhibition is not proving as popular as was hoped. In all the official Press advertising undertaken by the Festival Office, the exhibition has had equal prominence with other festival attractions. The Minister of Transport is satisfied that the transport facilities are adequate.

### The Bedroom Scale

Mr. Dalton, Minister of Local Government and Planning, stated in answer to Mr. Marples (June 19) that he had advised Local Authorities and New Town Corporations to build a higher proportion of one and two-bedroomed houses. This advice was based on information from many sources, including studies made by his Department.

In another reply Mr. Dalton stated that for permanent houses completed between April 1, 1945 and March 31, 1951 the proportions of one, two and three bedroom houses were 5, 16, and 76 per cent., respectively; for permanent houses in approved tenders in March this year the figures were 8, 34 and 55 per cent.

### Scottish Progress

The Secretary of State for Scotland announces that he has appointed a Housing Progress Panel, whose task will be "to keep under review, in relation to the building programme generally, all matters affecting the Scottish house building programme with a view to ensuring the best possible progress, having regard to the resources available; and to report from time to time." Mr. William Leonard is Chairman of the panel. The other members are: Mr. J.

Baird, Mr. W. Gordon Bennett, M.P., Mr. C. C. Brownlie, Mr. J. Carmichael, M.P., Mr. A. Carrick, Mr. E. Daly, the Earl of Elgin and Kincardine, Mr. R. S. Gray, Mr. J. Grimond, M.P., Mr. J. Love, Mr. A. Maclean, Mr. A. Macpherson-Rait, Mr. W. Maltman, Mr. C. Minihan, Mr. R. C. Palk, and Mr. J. R. Rutherford.

### Civil Investment Cuts

The announcement which the Chancellor of the Exchequer made on June 21 about the reduction in capital investment in this and succeeding years because of defence needs bears heavily on building and civil engineering. The housing programme is to be maintained—subject to local interference—but all new building for office and entertainment purposes is to be banned. There is to be a special survey in blitzed towns. Mr. Gaitskell's statement is given below:

The heavy new demands of the defence programme on the engineering industries must involve some check to civil investment at home. There will in 1951 be no increase in the supplies of plant and machinery available for home industry, while in 1952 and 1953 there must be a substantial reduction, since more and more of the engineering industry will be producing armaments; instead, even in 1951 there will be some fall in supplies for purely civil purposes.

In the case of the building and constructional engineering industries, output should continue to rise by about 5 per cent. a year. Provision will have to be made, however, out of this increased production for a substantial amount of defence work, and in the next two years some parts of the civil building programme are bound to be delayed in areas where important defence works have to be executed and where they will, if necessary, be given special priority.

### Industrial Building

Total fixed investment in 1951, including a substantial amount of defence investment, may amount to £2,230 millions (in terms of the prices ruling at the end of 1950), compared with £2,162 millions in 1950. It will be accompanied by an actual decline in the amount of civil investment, which must be expected to fall still further in 1952 and 1953.

Within this total it is intended that investment in coal, electricity, gas, coke ovens, railways, roads and petroleum will be higher than in 1950—in the first two cases substantially higher. The programme of new industrial building for manufacturing industry, other than the industries to which I have already referred, will continue at about the same rate as in 1950, but a proportion of the work will be on projects directly or indirectly related to defence, and fewer licences will, therefore, be available for ordinary civil projects.

There will be some increase in investment in education in 1951 and 1952, though less than was planned a year ago. The housing programme will be maintained at 200,000 houses a year, but there may have to be some local interference with house building in the interests of defence work.

Investment in other fields will have to be severely restricted. The volume of Government building will be checked and in 1952 will be below the 1950 level. Investment in the Health Services, on some Local Government services, and on university building will have to be less than it would otherwise have been, and in some cases will have to be brought down below the level achieved in 1950. It will be necessary also to reduce private building work for agricultural purposes.

### Banned Projects

The Government have also decided on two special measures. The building of all new offices will, for the time being, be prohibited, except where work has begun or already been authorised or in other very special circumstances, or in the case of offices which are an integral part of industrial establishments.

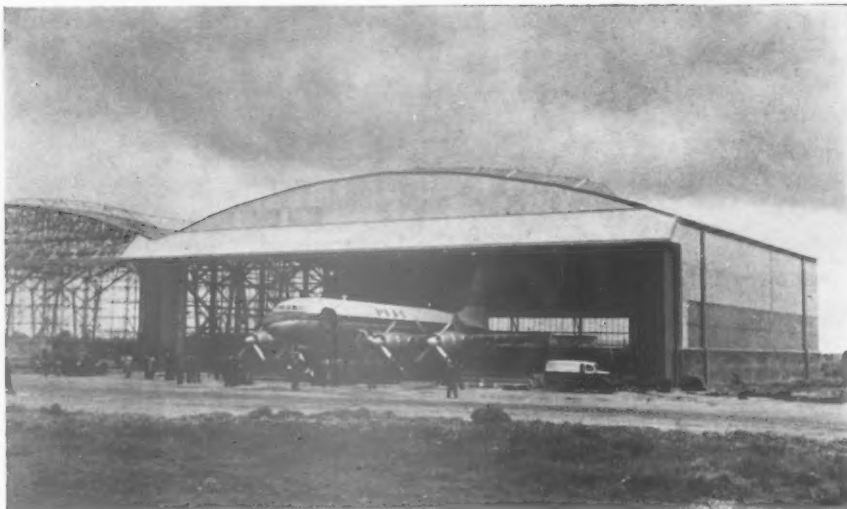
Secondly, it is proposed to ban all building projects for entertainment purposes costing more than £5,000. Projects costing less will be licensed only if there are especially strong reasons for permitting this work to be done.

These particular restrictions, and the general reduction in the level of civil investment, will unfortunately have to continue for some time. Architects, engineers and other professional and technical staff are urgently required now to deal with the large and sudden increase in the planning of defence works. The Government hope that all employers who possibly can will release staff—especially those engaged on long term civil projects—for this much more urgent defence work.

### Blitzed Towns

We have also considered carefully whether in the new circumstances further progress can be made with the reconstruction of blitzed towns and cities. It is clear that during the next two years it will not be possible to do much. We propose however to make a special survey of the position area by area, and to decide in each case, in the light of the supply of labour and materials, what might be spared for this purpose. Work already authorised will be completed and new work will be approved as and when this can be done without holding up more urgent and important projects such as defence and housing. The ban on new office building will not therefore apply to blitzed areas.

Among the many questions the statement evoked, Mr. Foot referred to the difficulties of the blitzed towns, and on this Mr. Gaitskell made it plain that work already authorised would be completed, and new work approved as and when labour and materials were available. The surveys would be carried out as quickly as possible, and in the light of the pressure of housing and defence work or available supplies it would be possible to see how much could be spared for the work of reconstruction, the building of shops and offices, and so on.



## ALUMINIUM ALLOY HANGAR FOR LONDON AIRPORT

designed and fabricated by

Structural and Mechanical Development Engineers

CONSULTING ARCHITECT: A. F. HARE & PARTNERS

**T**HIS, the first aluminium alloy hangar to be erected in England, was designed in response to an invitation by the Ministry of Civil Aviation to tender for a 3-bay Hangar in aluminium alloy construction.

The construction is basically portal frame and one of the considerations during the design stages was that of rapid erection in order to exploit one of the advantages of aluminium construction. Hinges were introduced to allow the assembly of a pair of half portals complete with purlins, rafter bracing, stays, etc., before hoisting, so that much of the erection work could be done either at ground level or at reduced heights.

The structure is designed to withstand a super-imposed load of 15 lbs. sq. ft. due to snow, and a wind load of 25 lbs. sq. ft., in addition to self-weight. The total weight of the complete building is approximately 312 tons. As the portal frames are hinged at the bases complications of indeterminacy on the foundation blocks is avoided. These hinges are at 145 ft. 6 in. centres across the span and are formed by a high tensile steel pin passing through an aluminium alloy base casting which is bolted down to the foundation block, with an aluminium alloy gusset casting forming the lower end of the portal leg.

Six portal frames at 22 ft. centres are required for each bay and these are constructed, in the main, of double channel sections battened together  $6\frac{1}{2}$  in. apart with internal members fitted between with gusset plates.

The portals are naturally designed to withstand transverse forces, but longitudinal stresses are transferred to the foundation blocks by means of vertical cross bracing between the first and second, and fifth and sixth portals; (steel bolts are set in the concrete and connected to the aluminium bracing members by means of screwed couplings).

Wind forces from the top door rollers, and the gable above are transferred to the springing line of the roof portion of the portal by means of a horizontal wind girder at door guide level. The wind load at the gable is carried from the 5 lattice gable posts through a system of rafter bracing between the last two portals down to the foundations by way of the side bracing previously referred to. Rafter bracing is also provided between the first two portals to transfer a much lighter load from the short gable posts above the doors to the foundations in a similar manner.

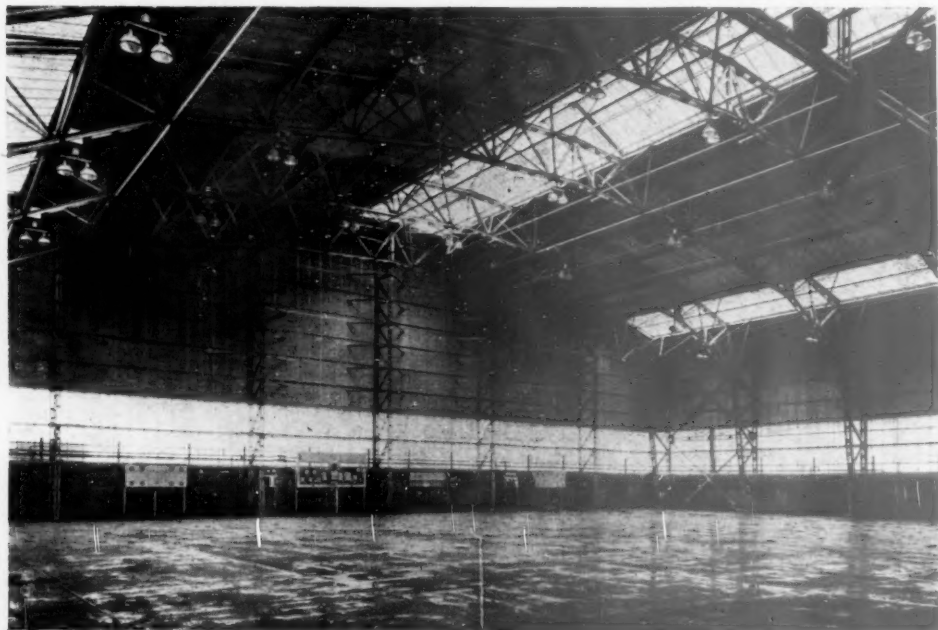
Standard rainwater goods were entirely inadequate to cater for the conditions; valleys and eaves gutters were produced by forming aluminium alloy sheet and the rainwater downpipes from extrusions and sheet fabricated into a rectangular section. Because the portals expand independently of those in adjoining bays the valley gutters are secured to only one of the double channel longitudinal gutter supports, thus allowing free relative movement of one bay with the next.

Vertical expansion joints are located in the side



Fixing the portals after winching

Interior view of the completed first bay



cladding, gable cladding and over the roof in the decking and glazing.

#### ERECTION

For this purpose winches were established 150 ft. or so behind and in line with each portal and the rope connected to shackles at the top of each portal leg, this being done after the lower end of the portal leg had been set on its hinges. As the total weight of the assembly was only in the region of 3 tons it is quite a simple matter to hoist the unit into its final position. A similar method was operated on the opposite unit and the apices were then connected together with turned bolts. This method was pursued throughout the length of the Hangar but in the case of the two centre portals, which had no permanent rafter bracing, the set from the front portals was fixed temporarily whilst lifting to avoid distortion. When all portals had been hoisted the remainder of the purlins, stays, ties, etc., were erected.

#### INSULATION

An insulation factor of 0.36 B.T.U.s per hour per degree F. per ft. was specified and therefore corrugated aluminium roof decking was employed covered with a layer of insulation board and bitumen felt, giving a U-value of 0.33.

The side walls and gables are constructed of corrugated aluminium alloy sheet with an air space of approximately 4 in. between this and a new insulation board with fire resisting properties lined with aluminium foil, which is in the form of a flat sheet of aluminium with corrugated aluminium backing. This gives a U-value in the region of 0.27. The doors with an overall length of 150-ft. were also specified to be insulated to the same degree.



Picture showing erection of half-portals by winching

*Aluminium—*

*Castings:* Renfrew Foundries Ltd.; *Extrusions:* Southern Forge Ltd.; *Foil:* Ardor Insulation Co.; *Plate:* T.I. Aluminium Ltd.; *Sheet:* British Aluminium Co. Ltd.

*Asbestolux Board:* Cape Asbestos Co. Ltd.

*Doors in First Bay:* Esavian Ltd.

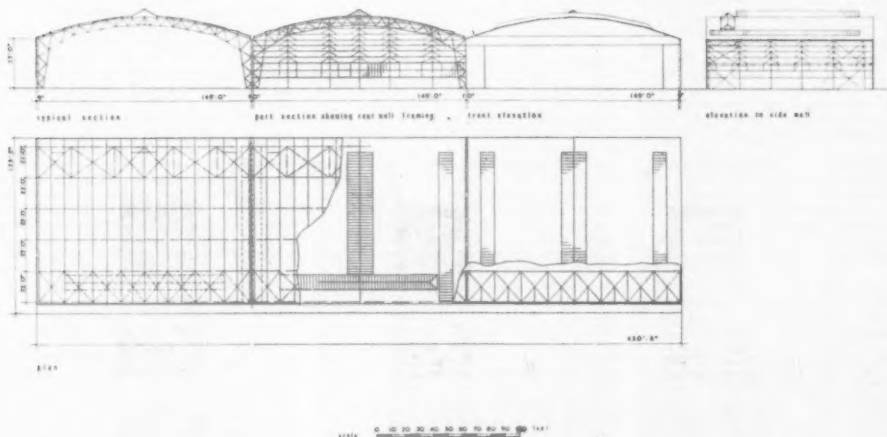
*Foundations:* George Wimpey & Co. Ltd.

*Glazing:* Williams & Williams Ltd.

*Lining—Interior:* Eastwoods Ltd.

*Roof Decking:* Wm. Briggs & Sons Ltd.

## ALUMINIUM ALLOY HANGAR, LONDON AIRPORT





## POINTS FROM PAPERS

## PLASTICS IN BUILDING AND ARCHITECTURE

Extracts from two papers read at the British Plastics Convention, held at Olympia, June 6-16. Chairman of the Session was R. J. Schaffer, B.A., B.Sc., Senior Principal Scientific Officer, B.R.S.

## The Architect and Plastics

BY GONTRAN GOULDEN  
T.D., A.R.I.B.A. DEPUTY DIRECTOR  
OF THE BUILDING CENTRE

MY qualifications for speaking on this subject are unimpressive. When I was asked to give a paper at this Convention I was considerably flattered and June 1951 was a long way off. After a preliminary conversation with the editor of *British Plastics* I appeared as a critic and it is in that capacity that I have written my paper. Looking through the imposing list of speakers I was alarmed to find that I was almost the only critic on the programme. I am also, as far as I can see, the only speaker who knows technically nothing about plastics and almost the only one who does not personally either experiment with, design in or manufacture plastics. I am, it is true, a user of plastics and I know and talk to a large number of other users and this is really my only qualification for addressing you to-day.

I have been, I must confess, in collusion with Mr. Lusty. In my conversations with him I once more appeared as a critic, and it was agreed that I should throw all the bricks and that he should counter, as best he could, with bouquets. I have now realised that this is nice for him and very dangerous for me. I hope that I am not going to be unjust to plastics manufacturers, but I may not please them very much and this may easily come back to me at the Building Centre. Here I want to make it quite clear that these are my own private views and not those of the Centre. I hope therefore that any manufacturers present—and Mr. Lusty is one—will take my remarks not as crabbed and conservative criticism but as a splendid springboard for proving that I am quite wrong. Before doing so, however, I hope that they will think a little for I believe there is something in what I am going to say.

I am particularly reassured to see that there are a number of architects present. If they agree with me I hope that they will say so. If they do not there is no doubt that they will. Architects seldom agree and it would be foolish if my paper were taken to be the considered opinion of the architectural profession for there is no such thing.

In speaking to a mixed audience of manufacturers, designers and users, it is difficult not to insult the professional knowledge or commonsense of each category in turn. If I do, please forgive me.

Plastics in the building industry form a very small part of the plastics industry as a whole. My critical remarks are only concerned with the building industry although I shall have a certain amount to say about other manufactured articles in my capacity of a user interested in good design.

Before the war the use of plastics in building was almost entirely confined to electrical switch covers and door knobs of the cheaper kind. They were usually a disagreeable brown, although black and colours had begun to appear. Normally these plastics components were only used

when nothing better could be afforded. The enormous development of the plastics industry has changed this. Large numbers of plastics materials in all colours of the rainbow singly, or mixed, are now available, in a wide variety of forms many of which are suitable for use in building.

Building is still essentially a traditional industry and although there have been big developments in non-traditional materials and methods, the bulk of building work is still traditional and is likely to remain so for some considerable time. This is a question upon which architects differ widely and so I will pass on hurriedly. Steel and concrete though comparatively new have not seriously competed with traditional materials except perhaps in the very wide use of metal windows, but have rather enabled things to be done in building which were previously not possible. The construction of high buildings with thin walls and large spans being the two outstanding ones. Plastics on the other hand directly compete with traditional materials and particularly with non-structural timber, plaster and some types of hardware.

In the time of shortage after the war plastics manufacturers had their big chance in the building industry and although some of them realised this and produced types of material now accepted by the building industry, they tended to approach the problem as imitators of traditional materials instead of as providers of new and better ones. We had a spate of sheet materials looking like wood or tiles and of door furniture and electrical fittings closely following metal designs. Whether he liked them or not the architect was forced to use these products and this may have given the manufacturers a wrong impression. The architect started off by thinking of plastics as a stop gap material and the very term plastics came to mean something not only of substitute material but of poor design as well. This feeling about plastics was not confined to the building industry but was shared by the public. To a certain extent it still is. From the music hall to the "Critics" plastics are food for wit. I believe that the blame for this unfortunate state of affairs rests with the plastics industry, not perhaps with the large manufacturers so much as with the small ones who sprang up shortly after the war. The materials were treated as "novelties" and there were no bounds to the abuses to which they were put. This faulty approach in a small part of the plastics industry obscured the very great strides being made in plastics for industry and to a lesser extent in plastics for building. Many of the plastic products now available in the building industry are very good indeed but like those made of every other material they have their limitations. For some reason which I cannot understand the world at large expects plastics to be perfect; possessing qualities undreamed of in any other material. I can only imagine that this state of affairs has been brought about by over zealous writers of advertising copy. Whatever the cause the result is that everyone starts by expecting too much of plastics and this is bad for the industry. For example: some way back in the history of plastics the wicked word "unbreakable" crept in with the result that people who threw their tooth mugs across the room or

lightly pushed their beds against surface type electrical fittings were disappointed. The layman was not in know that there were plastics and plastics, some tough, some weak, and it was not his fault when the manufacturer used weak materials or designs for tough jobs. The plastics industry is therefore working at a disadvantage. Great improvements have been made however and Mr. Lusty will have no difficulty at all in proving how wrong I am when he produces the series of excellently designed and manufactured articles with which he is to illustrate his paper. The fact remains that the public only knows the plastics industry by its failings. I will deal with the three main categories of plastics used in the building industry, sheet materials, moulded components, and extruded sections and tubing, separately. Plastics sheet materials are very useful where an easily cleaned surface is required but they suffer from the same disadvantages as other sheet materials in that it is difficult to deal satisfactorily with the joints. The metal or plastics cover fillet is not always acceptable nor is the vee joint which exposes an unattractive brown interior. Wood veneers incorporated in plastics sheeting often take on a hot brown finish and though unbelievably durable the colour is not popular.

If resin-bonded plywood was really easy to come by I think that there is no doubt that many architects would use it in preference to plastics sheeting. The reason for this is mainly that architects regard timber as the perfect material—it can be worked to any detail and will take any finish. Its versatility appeals to the designer. Plastics sheeting is an unpromising material. The finish remains superbly unchanged across the years but this is unfortunate if one happens to dislike it. Some of the textures and colours of plastics sheeting are good but the higher finishes show up imperfections in manufacture in the most unfortunate manner. New matt textures and colours are being developed and these should remove this criticism. I would like to see a wider variety of texture. Could not some of the glass manufacturers' patterns be reproduced? While sheet plastics are suitable where hygiene is the note to be struck, finishes suitable for living rooms require something with a more sympathetic finish. For notices, maps, bar-tops and backs the technique of incorporating decorative drawings in sheet plastics is excellent but this can be overdone. The resistance to burns possessed by some plastics is admirable, but it is a commentary on the age when it is suggested that cigarettes should be stubbed out on the table. Coloured table tops of plastics can be scratched especially if food is cut up on them and these scratches are permanent. Perhaps Mr. Lusty can tell us whether there is any hope of a plastic sheet coloured right through like Brighton rock.

The cost of sheet plastics puts them beyond the reach of many jobs and the argument that maintenance is low is really only applicable where a periodical change of setting is not required. Normal sheet plastics are not suitable for external use although I understand that special types are being developed. In the meantime much is being learnt from the experimental class rooms in Hertfordshire. There

are, however, many problems to be overcome before plastics take the place of traditional materials for external walling. In spite of the various objections to plastics sheeting mentioned above there is little doubt that more would be used if it were cheaper and I would like to ask Mr. Lusty whether from a raw materials point of view, the industry would be capable of meeting a vastly increased demand. One of the most successful uses of plastics sheeting is in transparent corrugated sheets for incorporation in ordinary corrugated metal roofing. Although the cost of the material is comparatively high the expense of trimming and kerbs for ordinary lights is saved. Though perhaps not strictly plastics sheeting resin-bonded chip board has been a god-send since the war but here again manufacturers have made what seem to me to be extravagant claims. It cannot be considered as a worthwhile substitute for hardwood in furniture construction; nor are the colours and textures which it takes as flooring likely to be very popular with architects.

Sheet plastics, from the roll, for floorings developed since the war are claimed to wear well but require very expert laying on a perfect base if they are to look well, and the technique of developing over complicated patterns seems to have attracted manufacturers rather more than the production of the floor finish itself. Plastics floor tiles, which may be considered here, have improved greatly since they were first introduced both in colour and performance. They seem to me to require rather too much maintenance still. If not regularly polished they deteriorate and when polished even with special preparations they tend to be too slippery. I am not going to say anything about jointless floorings although many of them include plastics in some form or another, for there is some doubt as to whether they should be considered as plastics themselves. Substitutes for wood floorings have boomed since the ban on softwood on the ground floor, and it will be interesting to see whether plastics and other floorings will be able to hold their own if and when softwoods return.

Moulded plastics products for building cover a very wide range, from water waste preventers to door knobs. I have already mentioned electrical fittings and their lack of robustness. I am told that manufacturers now realise the weaknesses of this type of moulded ware. Unfortunately much damage has already been done to the industry by the bad performance of these fittings. Perhaps Mr. Lusty can tell us whether it would not be possible to manufacture electrical fittings from some tougher material while keeping the cost within reasonable bounds. In general the appearance of wall sockets and switches is reasonably good but this is seldom true of lamp shades and other light fittings. Streamlining is not quite so widespread as it was, nevertheless some plastics manufacturers cannot resist it. Having produced an aerodynamic shape for some stationary object they are not content until it has been decorated with lightning flashes or stepped lines or ships in full sail. This state of affairs is not confined to plastics, but because of the technical skill of the manufacturers it is easier to do in plastics and therefore more prevalent among plastics products. There are naturally exceptions and an increasing number of manufacturers are employing first class designers either on their staffs or as consultants. This growing awareness of the value of good design is due in great part to the Council of Industrial Design whose work in this and other fields is gradually making both manufacturers and public more interested.

Well designed plastics door furniture is

not easy to find. Too much attention has been paid to imitating metal forms and to providing ugly embellishments. Colours and finishes could also be better. Some manufacturers appear to prefer jazz marble patterns to plain colours. Is there a technical reason for this or is it the familiar cry of "that's what the public likes." This is not the time to investigate the thorny problem of what sells and what does not but architects are only too painfully aware that such a problem exists. My own feeling is that the South Bank and other exhibitions of the Festival of Britain will do much for good design generally and I only hope that the plastics industry will be among those which take the tip.

Extruded sections are mainly used as trims and for the covering of joints in sheet materials; they are also being introduced for glazing beads. Tubes which can be supplied in considerable jointless lengths are already in use in agricultural work and for the vital task of connecting bar to cellar. Experiments have also been going on for some time with plastics piping for plumbing and although it has its own particular problems of suspension and fixing it may well be the material of the future. I hope that Mr. Lusty will be able to tell us something about it.

In conclusion, the architect—one should not really generalise about architects, it is too dangerous—does not like materials which pretend to be something else. He does not like jazzed up patterns nor streamlined designs, nor bad and meaningless ornament. He does not like fittings which perform badly. I think that two things that he would very much like to see in plastics would be an invisible jointing system for sheet materials and a great deal more really well designed door furniture—and of course a big all round reduction in prices.

I have thrown my bricks and I feel sure that among his bouquets about plastics, Mr. Lusty has some well concealed bricks to throw at me.

\* \* \*

## What the Plastics Industry offers the Building Industry

BY H. H. LUSTY, A.M.I.E.E.  
MARKETING MANAGER,  
BAKELITE LIMITED

PERHAPS I should start by answering Mr. Goulden's criticisms. These can, I think, be reduced to three—

1. Bad design and poor performance of moulded products—the one often results from the other.
2. Imitation of traditional materials.
3. Limitations of plastics sheeting—not the least being the price.

It is true that many mouldings are badly designed and are fragile. These are not valid criticisms of the materials, nor necessarily of the industry. These shortcomings arise from the failure of the manufacturers to recognize the fact that mouldings made from ordinary grades of thermosetting powders are brittle, and to make suitable provision for strengthening them; from a slavish imitation of designs normally made in other materials, and from the overriding desire to produce fittings as cheaply as possible. This cheeseparing has done the industry a lot of harm, but there is evidence that these shortcomings are recognized by reputable manufacturers, and greatly im-

proved electrical accessories, for example, are now available.

We must also admit the charge of imitation of traditional materials. We can only plead in extenuation that there is a big demand for materials that will harmonize with normal home furnishings, and that, from the plastics manufacturers' point of view, it is much easier to produce mottled finishes than plain colours. The manufacturer who could resist a large demand which coincides with his simplest manufacturing process would be something of a superman.

Possibly one of the worst things the moulding material manufacturer did was to name his mottled materials "walnut," "light oak," and so on. Had they been numbered, say, "brown mottle 20" instead of "walnut," I do not believe that there would have been nearly so much criticism of these so-called "imitations."

I imagine this criticism also to be levelled at imitation wood finishes on sheet laminates. The public house owner, who was one of the first and biggest users of these materials, wanted something with the properties of laminated plastics but which would tone in with his rather sombre premises, and wood finishes were greatly favoured for this purpose. Also the manufacturer, in seeking variation from his natural plain browns and blacks, found printed wood grains ready to hand, and used them. These are natural processes in the evolution of the material, and as manufacturing techniques improve, and new materials become available, are giving way to plain colours, and to patterns specially designed for plastics.

When Mr. Goulden talks about the "imitations of sheet materials," I presume he would like to combine the heat and chemical resistance and hard wearing properties of thermo-setting plastics with the formability of thermoplastics. He is not alone in this desire, but it is a goal that the plastics industry has not yet reached.

On the score of price, sheet plastics are made from expensive raw materials by laborious processes, employing expensive plant, and there would appear to be little prospect of reduction in prices in the immediate future. The fact, however, that sheet plastics are being bought as fast as they are made surely indicates that someone regards them as value for money.

### Ministry of Works Report

This general subject was very ably covered by a Ministry of Works Report published in 1944—"Post-War Building Studies No. 3—Plastics," which contained the findings of a special study committee of the British Plastics Federation. I propose to consider the various improvements and advances that have been made since the publication of this report.

### Wall Panelling and Partitions

High-pressure laminates consist of sheets of paper impregnated with synthetic resin and moulded together under heat and pressure to form homogeneous boards.

They are made in sheet sizes up to 9 ft. x 4 ft. and various thicknesses. For furniture manufacture and building purposes 0.020 in. and 0.125 in. are standard thicknesses.

A corrugated high-pressure phenol-formaldehyde laminate is used for roofing and exterior walling. As a roofing material its electrical insulating properties give improved safety from lightning. For some factory applications its resistance to corrosion is particularly important, for exposure of the material in its natural colour for long periods to the influences of gases and chemical fumes, normally present in industrial vapours, produces no ill effects.

A recent development is a high-pressure

laminate on an alloy core. This provides a material which is non-inflammable, and which will retain a form curve. The widest use to-day of these metal-cored materials is for ceilings in railway cars.

#### Mural Decoration

A number of attractive patterns and plain colours are now available. Examples of work in this direction are the high pressure laminates adopted by the Festival of Britain authorities for surfacing walls and tables in the Regatta Restaurant on the South Bank and elsewhere. These incorporate patterns based on crystallographic designs, and were developed in collaboration with the Festival Pattern Group.

Experiment with textured finishes for decorative laminates have proved so successful that this type of material was adopted for the Lyon's Teashop opened in the Spring in Lower Regent Street. This particular finish consists of narrow flutes running the length of the material.

#### Applied Finishes

The 1944 report noted the properties of decorative finishes based on modified phenolic and glycerol-phthalic anhydride resins as durability, good colour retention, ease of application and hardness. All concrete finishes are based on synthetic resins, except, of course, concrete washes.

Development in the past seven years has been steady if unspectacular. A recent example is a finish, primarily intended for plaster surfaces, that dries to quickly that a second coat can be applied within four hours of the first, and the final surface can be wet scrubbed within 24 hours.

#### Plywood Improvements

The qualities of plywood bonded with synthetic resin adhesives, evoked very favourable comment in the 1944 report. It retains the characteristics of wood, and frequently gives better results.

A notable achievement in the past few years has been the development of a plywood adhesive based on synthetic resin which is used for the manufacture of high-grade plywood conforming to British Standard 1203, AX100, at low temperature.

So far as I have been able to ascertain, synthetic resin bonded plywood is not being used extensively in the building industry in this country. It is, however, widely used in the manufacture of utility furniture, and, of course, for wooden aircraft and gliders.

#### Wall Tiles

The 1944 report mentioned the possible use of polystyrene for lightweight decorative wall tiles. This application has been greatly restricted by the shortage in this country of polystyrene. In spite of this, however, a number of very colourful polystyrene wall tiles are available; they are light in weight, quite unaffected by moisture, and easy to fix.

During the past year, a polystyrene block—not unlike a glass brick—has appeared on the market. It is available in a number of colours, and in a transparent form, and the appearance of a partition is appreciably enhanced by the design of the block, which incorporates an interlocking flange, eliminating the need for cement. These blocks have the light transmission properties of glass, but are one-fifth the weight.

#### Flooring

Various types of vinyl tile are on the market. One is built in two parts—a core, which provides a shock-absorbing base, and is made up of a compound of p.v.c. and cork, and then the actual wearing surface, which is p.v.c. As the core does not constitute the wearing surface the abrasion qualities are only of secondary importance, and only the indentation and

shock-absorbing qualities are important.

This particular tile has a matt surface in order to give it non-skid properties, but it can, if necessary, be polished with ordinary beeswax. These tiles have been subjected to acid, grease, abrasion and other tests with very satisfactory results.

It has been found that there is no difficulty in laying the tiles direct on to timber floors, provided that the movement in the boards is not excessive. When laying a new timber floor it is usual to lay bituminous felt between the boards and the tile in order to take up any excessive movement. When laying on concrete floors it is usual to prime the floor, or where there is a risk of rising damp, to apply a bituminous screed. It is obviously desirable to ensure that the sub-floor is as good as possible.

#### Glazing

When the 1944 report was published, experience of poly-methyl methacrylate—a thermoplastics material—was mainly confined to its use in gun turret enclosures and observation domes in aircraft.

In practice it has been discovered that this material, in a corrugated sheet form, is ideal for factory roof lighting. It is, in fact, installed in the same way as normal corrugated metal and asbestos sheets; no special steel work, lead flashing or other provision is required.

The light transmission of corrugated acrylic sheet is 92 per cent., which compares favourably with the 80 per cent. of  $\frac{1}{2}$  in. wired glass.

The plastics material that has proved most successful in plumbing is one not specifically mentioned by the 1944 committee in this connection. This is polyethylene. It is approximately one-tenth the weight of lead, is flexible, non-toxic, non-contaminating, resistant to a very wide range of chemicals, and not corroded by water, air or soil.

It is available in  $\frac{1}{2}$  in.,  $\frac{3}{4}$  in. or 1 in. nominal bore. It can be cut with knife or saw, screw threaded, using ordinary equipment, and jointed, using metal fittings, but welded, or connected with a sleeve of the same material.

The use of polyethylene for domestic cold-water systems has only been attempted so far on a limited scale, but tests in houses fitted with a complete polyethylene cold-water system have proved its undeniable advantages.

#### General Fittings and Accessories

I do not intend to catalogue the multiplicity of available plastics fittings, which range from electrical plugs and sockets to door furniture and toilet seats, and which have found general acceptance in the building trade over the last 20 or 30 years.

Many of them have been criticised, as Mr. Goulden has criticized them to-day, on the grounds of their fragility or bad design. They continue, however, to be used in large quantities because of the many advantages they do offer, and as I said earlier, there are definite signs of improvement in design.

#### The B.P.F. Certification Mark

Recognizing this weakness in the plastics facade, and in an effort to overcome it by establishing standards of quality, the British Plastics Federation, in conjunction with the British Standards Institution, has introduced a Certification Mark Scheme. Although the scheme is still in its infancy, it should, when fully developed, provide the purchaser of plastics products with an excellent safeguard. He will know that any article bearing the Certification Mark has been made from certified powders and moulded by an approved moulder in accordance with the specifications of the relevant British Standard.

#### BOOKS RECEIVED

*Planning the Library.* Published by Roneo Ltd., 17 Southampton Row, W.C.1. Price 10s. 6d.

*Housing and Town and Country Planning: Bulletin No. 4, Oct. 1950.* Published by H.M. Stationery Office, P.O. Box 569, S.E.1. Price 11s.

*Buying and Selling a House,* by M. B. Evans. Published by Stevens & Sons Ltd., 119 & 120 Chancery Lane, W.C.2. Price 6s. 6d.

*Principles of Surveying,* by James Clendinning. Published by Blackie & Sons Ltd., 66 Chandos Place, W.C.2. Price 20s.

*Structural Theory: 4th Ed.* by Hale Sutherland and Harry Lake Bowman. Published by Chapman & Hall, 37 Essex Street, W.C.2. Price 40s.

*Willesden Survey, 1949,* prepared by John C. Morris. Published by the Corporation of Willesden.

*Nineteenth Century Architecture in Britain,* by Reginald Tumor. Published by B. T. Batsford Ltd., 15 North Audley Street, W.1. Price 21s.

*Sweden Builds,* by G. E. Kidder Smith. Published by Architectural Press Ltd., 9 Queen Anne's Gate, S.W.1. Price 45s.

*English Inn Signs,* by Jacob Larwood and John Camden Hotten. Published by Chatto & Windus, 40 William Street, W.C.2. Price 42s.

*Small Towns—Their Social and Community Problems,* by L. E. White. Published by the National Council of Social Service, 26 Bedford Square, W.C.1. Price 3s. 6d.

*A Plan for Accrington,* by J. S. Allen and R. H. Mattocks. Published by the Borough of Accrington. Price 30s.

*Practice and Procedure for the Quantity Surveyor,* by Arthur J. Willis. Published by Crosby, Lockwood & Son Ltd., 39 Thurloe Street, S.W.7. Price 18s.

*Century and a Quarter,* by C. G. Dobson. Published by Hall & Co. Ltd., Victoria Wharf, Croydon, Surrey. Private Circulation.

*Perspective Drawing—Freehand and Mechanical,* by J. W. Hull. Published by the University of California; Agents: Cambridge University Press, Bentley House, 200 Euston House, N.W.1. Price 19s.

*William Strickland: Architect and Engineer, 1788-1854,* by Agnes A. Gilchrist. Published by Oxford University Press, Amen House, Warwick Square, E.C.4. Price 80s.

*Industrial Polishing of Metals,* by Gerald F. Weill. Published by Iliffe & Sons Ltd., Dorset House, Stamford Street, S.E.1. Price 21s.

*School Construction, 1950.* Published by Councils & Education Ltd., 10 Queen Anne's Street, S.W.1. Price 10s. 6d.

*How to Estimate—Being the Analysis of Builders' Prices,* by J. T. Rea. Published by Batsford Ltd., 15 North Audley Street, W.1. Price 21s.

*Design for Sanatoria: Report of the N.A.P.T. Architectural Committee.* Published by the National Association for the Prevention of Tuberculosis, Tavistock House, Tavistock Square, W.C.1. Price 12s. 6d.



## LIBRARY NOTES

Nineteenth Century  
Architecture in Britain

By Reginald Turnor. Batsford, 21s.

THE inclusion of the History of Nineteenth Century Architecture in the R.I.B.A. Examination Syllabus has drawn the attention of both Students and Examiners to the lack of adequate text-books on the subject and there is a growing demand for a comprehensive and objective study of this most interesting period.

Knowing the Batsford tradition and remembering the standard works of Anderson or Spiers or Ward and the careful revised editions prepared by Ashby and Dinsmoor and Stratton one might have expected that Mr. Turnor's *Nineteenth Century Architecture in Britain* would have been designed to stand alongside these earlier productions. Any such expectation is doomed to disappointment, this book will not find its place with the serious histories but with the popular picture-books.

It is perhaps unfair to blame the author for failing to achieve something that he has not even attempted; his product is no worse and no better than several similar essays that have appeared recently, but Lecturers and Examiners are unlikely to add it to their lists of essential books for students. Surely it would be possible for the publishers to commission a study of the Nineteenth Century that would be comparable to their histories of earlier periods.

Mr. Turnor's approach to his subject can be deduced from the fact that not one of the buildings discussed is illustrated in plan! Very little attention is paid to the remarkable changes in building technique that took place during the period under review. On the other hand a great amount of space is given over to the author's comments on the opinions of other critics. Many of these comments are irritatingly patronising in tone and are interesting only for the light they throw upon the author's personal prejudices. It is evident that he bases his approval or disapproval of a building or of its designer on nothing but his own narrow and arbitrary aesthetic ideals, and his assessments of the abilities and relative importance of the architects whose work he discusses are lacking in penetration and apparently based on a very superficial examination of their buildings.

Mr. Turnor likes the Classical Style, but he does not like the Gothic Style, nor is he very keen about the Modern Style and his conclusion is that "It may be that we can have no buildings of which a later generation may be proud—at least until out of the structural theories and mechanical moralisings there comes a return of the old-fashioned belief that architecture is an art."

Wyatt and Soane "may be thought to have had genius," Scott, Street and Butterfield did nothing good, though it is suggested that the last named "in an age of taste, might have been a great architect." It is "impossible to with-

hold sympathy from Pugin," but Waterhouse gets no sympathy at all. "University College Hospital is in a style which cannot be classified and can only be called 'Waterhouse'" says Mr. Turnor and passes on without any comment upon the revolutionary planning of a very able architect, nor does he notice anything but the external appearance and materials of the King's Weighhouse Church. It is not to be expected that the author of an historical study will like or admire all the characters or all the buildings that come under his scrutiny but Mr. Turnor's appreciation of architecture is so limited that one cannot help feeling that if he had written a political instead of an architectural history he might have confined himself to a critical comparison of the noses of Gladstone and Disraeli and omitted all reference to their respective policies and actions.

Many of the judgments of Sir Reginald Blomfield are quoted with approval but Mr. Turnor cannot agree with him that "Scotland Yard is, apart from the Houses of Parliament, the finest public building since Somerset House." However he allows Shaw "buildings good for their date," and says that "He was, in essence, the man who freed architecture from the moral field in which Butterfield and Street worked, and from the paralysing tastelessness of Scott and Waterhouse. He gave up hope to the twentieth century."

Philip Webb is represented only by the usual illustrations of Red House—it is time that someone gave publicity to Webb's later work. Red House is a comparatively juvenile design made under the influence of Street and Butterfield, of interest only because it shows Webb's point of departure, it throws no light at all upon his tremendous influence over men as different as Lethaby and Lutyens. Webb's power can only be appreciated by a study of the buildings of his maturity; in particular his cottages and barns and the smaller houses, such as Smeaton Manor, the additions to Great Tangle, and the Surrey houses that so much impressed the young Lutyens.

Mr. Turnor says that he "cannot believe that Shaw or Webb thought in terms of 'realising the futility' of styles," which is very odd in view of their recognised remarks and letters quoted by Lethaby, Quennel and others. For example, Shaw, in a letter to Lethaby, wrote, "We know much about Leonardo and old Wren but the times are so different. Reinforced concrete ought to do a lot for us. What do you say to a turn on those lines? I am sure we are doing no good at present; we have kicked the 'Gothic revival' out from below our feet, and we are doing the 'English Renaissance,' which in its turn we shall kick away too." Nevertheless there is justification for repudiating the oft repeated claim that Shaw and Webb were fathers of modern architecture, and it must be obvious to anyone who takes the trouble to study their works and sayings at first hand that they had little or nothing in common with their self-appointed

successors and that they would have repudiated the suggestion of paternity, as firmly as did Lethaby and Voysey and Lloyd Wright, if they had lived to see the sterility of the present day modern movement.

Apart from matters of opinion and criticism it is only fair to warn possible student readers that in places the writing of this book is so slipshod as to be misleading. Only a single example need be quoted, a reference to "Atkinson's scent shop in Bond Street, which Voysey designed in the present century," might easily be taken to refer to the present building which is of course by Vincent Harris.

JOHN BRANDON JONES.

## The City of London

A Record of Destruction and Survival. With a Report on Reconstruction by the Planning Consultants, C. H. Holden and W. G. Holford. The Architectural Press. 25s.

THIS compendium provides the story of the City of London from Roman times up to the present day, and, by means of some delightful drawings by Gordon Cullen, a foretaste of the City of to-morrow. If London's streets are not to be paved with gold, they will at least, in the fashionable townscape mode, be paved with a greater variety of pattern than in the past. For the town planner, this book now completes the set which was begun by the *County of London Plan* and followed by the *Plan for Greater London*. Its production was well worth while, for the story of the City of London is a fascinating one, and this book is crammed with much material of great interest. For the mere provincial, who regards the City as a place where the Lord Mayor stages a somewhat extravagant and ridiculous Show and where unnecessarily expensive banquets are too frequently held, this book should provide a salutary corrective.

Here is the story of what Professor Rasmussen rightly called "the unique city"; a city whose density of building has steadily increased until—except for war damage—the amount of open space left is negligible, but whose density of resident population has dropped, within the last hundred years, from 130,000 to 9,000—from the size of Wolverhampton to the size of Wokingham; a city of caretakers, and the commercial hub of the Empire.

Here, too, is the story of the rebuilding of London after the Great Fire of 1666, which, in spite of the fact that "there was a war on", was, according to the inscription on the Monument, achieved within four years. A similar technique was proposed in 1666 to that which is to be used by the City Corporation in the new redevelopment. The extent of damage in 1666 was much larger than in 1940-45, and the resident population affected was, of course much greater, but the solution of 1666, in which there were only four types of house, scaled in size according to the importance of the streets along which

they were to be placed, is dreary when compared with the exciting scheme proposed by Holden and Holford at the end of this book. It is now six years since the last Great Fire of London, and very little has risen from the ashes; but that little is a beginning, and, what is more, the production of this book by the Improvements and Town Planning Committee of the Corporation of London indicates that the *Plan for the City of London*, unlike so many published plans in the past, is not dead.

I make only one very minor criticism. There is a caption opposite a 15th or 16th-century engraving on page 108, which reads: "William the Conqueror at the Tower. The illustration is said to be from a contemporary drawing." I wonder who said it?

CECIL STEWART.

### The Urban Pattern

By Arthur B. Gallion, in collaboration with Simon Eisner, D. Van Nostrand Company, Inc., New York.

"AMERICA'S youth," said Oscar Wilde, "is the oldest of her traditions." America is still the New World, and especially in the field of town planning. By that I do not mean that there is something particularly novel about planning in America, but that planning is still a new subject to the Americans. In England, over the last couple of decades, our bookshelves have been flooded with plans for this and projects for that, but it is only now that America appears to be approaching that stage which we reached with the passing of the 1932 Town and Country Planning Act. The prospect of a planned environment in America is still only an idea, while we (if our environment is not yet planned) have at least evolved our paper patterns and, with the passing of the 1947 Act, are fast approaching the time when these patterns may be translated into reality.

There is, therefore, much in this new publication from America that is now firmly woven into the historical bibliography of the English planner. The stories of slums and decay and of traffic jams; the pictures of chaos and squalor on the one side, and, on the other, the green and pleasant Utopia that is presumed to be the happy result of planning, are all here much as they were in our books of ten or fifteen years ago. But the problem in America has features that seem strangely exaggerated to us. The root problem of the towns lay in the rule that the city was a business proposition and that it must pay dividends. Every square foot of land had a value, and none could be wasted. The city was not so much a convenience for civilisation as a means of exploiting land values. Nor was this discouraged by zoning. Indeed, the fantasy of American zoning laws permitted a building volume in New York City sufficient to house a population of 77,000,000 people; in Chicago, it was possible to build to a density of 2,200 persons per acre. How such a state of affairs was reached is here vividly described in urgent prose. It is the middle section of this book that is the most interesting and important. The opening chapters provide a potted

history of conventional lines, which take one from Kahun to Miletus, from Timagad to Carcassonne, in brief and snappy stages.

The concluding chapters present ideas of neighbourhoods and shopping centres and precincts that are all old stuff and do not add much to the great mass of planning data that is already available in this country. The heart of the book is really good, for it not only gives us the history of America's gridiron lot development, but it shows how intensely difficult and urgently necessary it is to find a solution to the problems that are already acute in the United States.

The aim of this book—"to contribute to a clearer realisation of democratic responsibility for the condition of our urban environment"—should be achieved, and it is to be hoped that "the future generation" to whom it is dedicated will benefit accordingly.

CECIL STEWART.

### York

By John Rodgers, M.P. Batsford, 8s. 6d.

THIS is another work in a series with the admirable aim of providing compendious books at modest price on places of historic and architectural note. It means, however, that space imposes a severe strain on authors when the subject is such a city as York. The books have to be part history, part architecture; how much there is of each depends on the individual propensities of the writers. Mr. Rodgers leans to history (not without some misapprehensions and a few outright mistakes) and he can therefore give little more than an indication of what there is to see in a city that has been lucky in preserving mediaeval churches and glass and a particularly choice collection of Georgian buildings. There is little by way of criticism or appraisal, but Mr. Rodgers emphasises the great importance in the corpus of English architecture of the almost complete *enclave* of York's walls: he reminds us that till 1808 the appearance of the bars other than Walmgate was, by reason of the surviving barbicans projecting beyond them, very different from their aspect that is so familiar now. He also gives helpful glimpses of the ruined St. Mary's Abbey, a church that was more beautiful if less bulky than the Minster, but on the Minster itself one would have liked more. He is best, however, on the society and architectural achievements of the Georgian period when York was the social and cultural capital of the North with a courtly life of its own, and Assembly Rooms by Lord Burlington, that Lawrence Sterne did not disdain to adorn. The illustrations are notably helpful here, and it is interesting to know, among other details, that Carr's first building (in 1754) was a grandstand at the race course.

Throughout the book, if only because the space could have been used to give more information, one would have liked less advice and admonition, but Mr. Rodgers has some sensible suggestions on such points as the custody of churches in the city that can no longer be used for worship and may therefore get destroyed.

BRYAN LITTLE.

### Salisbury

By R. L. P. Jowitt. Batsford, 8s. 6d.

THE important thing about Salisbury is not its antiquity, but the fact that (except for the tiny pre-13th century hamlet of Milford) it is a relative newcomer among our English towns, a newer human settlement than Stevenage or Hemel Hempstead. It is indeed the most important mediaeval example of a "new town"; its streets were laid out methodically in squares and their breadth, modest for the needs of twentieth-century traffic, was palatial by the standards of the Middle Ages. It is good to find that these points find their place in Mr. Jowitt's brief and well illustrated volume; he is also excellent on the Old Sarum that preceded Salisbury and on the varied reasons that led the canons of the highly interesting Norman cathedral to desert the windy hilltop for the water meadows by the Avon. Some of these are strangely modern—the noise of the wind and the rheumatism supposedly caused by it, the glare from the chalk which then had no mantle of grass, the bad water supply. This last point, but not one imagines the rheumatics, should have been amply remedied by the flood-prone site that Bishop Poore somewhat unscientifically chose for his new city and for a cathedral whose main interest lies in its being built from the first stone on a virgin site.

Mr. Jowitt's text and illustrations in general do considerably better justice to the city and Close than to the cathedral. This is a somewhat new, and to my mind very reasonable approach for a book on Salisbury to make. For the cathedral can be amply studied from many sources, and in greater detail than can be done in so short a book. It is therefore unfortunate that the best modern book on the cathedral (Dr. G. H. Cook's) is not listed in the bibliography. There is, of course, much fulmination against Wyatt, not all of it quite fair. No one could claim that Wyatt was at his best at Salisbury, but he was far from being alone in his ideas about vistas and "tidying up." Many Georgian designers and divines felt just as Wyatt did, and Essex did quite as much scouring out at Ely. Nor must we forget, despite the sad loss of the detached belfry (as also at Worcester), that we owe to the Georgians the present aspect of Sarum Close. It is an interesting artistic irony that Pugin, who did not like the Georgians, should have specially admired the setting they created for Salisbury Cathedral. Incidentally Pugin's own work in Salisbury, his house "St. Marie's Grange," and the main fabric of St. Osmund's Catholic church, finds no place in this book—the only serious omission I noticed.

BRYAN LITTLE.

### The Stained Glass of New College, Oxford

By Christopher Woodforde. Oxford, 25s.

REV. Dr. Woodforde is already well known for his expert surveys of old glass in Somerset and in East

Anglia; my only regret when reading this volume on his own college is that it does not also include the smaller quantities at the sister foundation of Winchester, the more so as the two main sets of windows in the chapels were closely akin when first inserted during the last years of the 14th century.

New College ante-chapel is one of the few places where Perpendicular architecture can be seen as its designers intended, in other words with its large windows neither plain nor darkened by Victorian glazing, but with the translucence of the original glass letting in the right amount of light and producing an ensemble where the colour proportions are just correct. A detailed study of the college's glass (for Dr. Woodforde covers all the premises and not only the chapel) is therefore the more welcome, and this one is a worthy record and a devoted piece of scholarship. Dr. Woodforde's approach is scholarly and ecclesiastical rather than technical or stylistic; he does little to relate these particular windows to English mediaeval glass as a whole and assumes a fair degree of such knowledge in his readers. Even so, the book would have been more helpful with some diagrams of the windows and with ground plans of the college as a whole and of its chapel.

The history and subject matter of the New College windows is extremely well traced. In the section on the Middle Ages the author shows how much of the work was done by the successive members of a family named Glazier—a clear case of an occupation persisting as a surname along with the continued practice of the trade. Among the most interesting passages are those on the gradual destruction of a high proportion of the glass. The early Reformers were hard on such non-structural fittings as screens and statues, but glass, as at New College and often elsewhere, was spared for the simple reason that windows would have needed replacement if buildings were still to be used.

A leading motive in the wrecking of monastic churches was their supply of useful commodities, and an age that suffered from lead and glass shortage was unlikely to nullify its gains more than it could help. Puritans, churchwardens, and gradual decay, did more to mediaeval glass in our still used churches than Tudor despoilers; I have seldom seen this point so well implied as in Dr. Woodforde's book.

In such a work he is largely dependent on his available sources, and as these are copious for the 18th century he has more to say on the important Georgian glass of the college than on the history (as distinct from the detailed description) of the mediaeval windows. William Price the Younger, Biagio Rebecca, and Peckitt of York, all had a hand in the New College glazing apart from the better known and much attacked Reynolds-Jervais window at the West End, and many other important names in Georgian cultural life come into the story. It is interesting to find that Mrs. Elizabeth Sheridan, nee Linley, was the model for one of the "half dressed languishing harlots" intended as symbolic figures in the West window. Also that valuable panels from the college's 14th century Jesse window are now in York Minster where they were placed by Peckitt.

One thing only is unhappily wrong with this book. The illustrations are good and well chosen, but there should be more of them and several more in colour. The defect is the fault neither of Dr. Woodforde nor of the Oxford Press. It is part of the inexorable nemesis exacted by present-day production costs which are making it almost impossible to produce adequate literary studies of the visual arts.

BRYAN LITTLE.

## Bridges

By Paul Bonatz and Fritz Leonhardt.

THIS German publication is intended to show the evolution of the bridge by means of pictorial illustrations. There are six pages of introduction and 103 plates. One can only presume that the authors' intention was to create an interest in the evolution of bridges and not to aim at the production of a text book on the subject. If it was the latter, the book has little value; if it was the former, they have achieved a certain measure of success, but it is by no means as thorough as one would have expected for a German publication.

The illustrations of early bridges are not a fair sample and do not, to my mind, portray the true steps in bridge evolution. The section dealing with stone bridges is the most interesting, and although the majority are of German bridges, they do show how the art of building bridges in stone was similar in the majority of countries. It is difficult to believe that many of the illustrations are not of rural bridges in Great Britain.

Looking through the Renaissance examples one is tempted to ask why did they not copy the example of the medieval bridge builders, who designed their bridges on simple lines, using local materials and eliminating fussy detail. It would appear that Renaissance designers were afraid of plain surfaces. Does the addition of finery such as columns, pilasters, niches, balustrades or garlands make a good design or a poor design good, or add to the amenities of the surrounding areas? Looking through some of the illustrations I feel there is only one answer.

There are some excellent illustrations of modern well-designed bridges. On the majority it would appear that an architect has been commissioned to design the bridge and not, as so often is the case, merely clothe an engineer's work.

It is regretted that the authors have only thought fit to illustrate one bridge in Great Britain, namely, the Forth Railway Bridge—and then with two second-rate photographs. They might well have illustrated at least one of our ribbed stone bridges or our early clapper bridges. No examples of either of these two types of bridges appear to be shown.

The introduction, written in heavy German, is more for the general reader than the student of architecture, although there are points in it which bridge architects would do well to note. If my translation is correct, I like the phrase, "An architect should be in control of the technical side of bridge building if he has a sense of beauty." I agree with both parts of the sentence,

as I feel every architect will, who has had anything to do with bridge designing.

M. E. T.

## Planning Outlook—Vol. II No. I

THE number of weekly and monthly technical journals published dealing with architecture and planning is surprising. There are some which I must admit guilty of quickly looking through and some which I read, and what is more, enjoy reading. Planning Outlook falls definitely into the latter class. I have enjoyed some part of each issue.

The present volume is no exception. The opening article by Sir George Pepler, entitled "A National Plan for England and Wales," is brimming over with serious food for thought backed by Sir George's lifetime experience of planning. I hope it will be widely read, particularly in certain quarters. Although he has spent the majority of his life in Government Planning offices, Sir George has always been an advocate of the Parish Pump. In this article he lays great stress on the local view.

Those of us who are struggling to attempt to plan in a developing area as opposed to a development area will wholeheartedly agree with his reference to the lack of planning in the Board of Trade.

The following quotations from his conclusion are worthy of repetition. "A National Plan imposed from above would be quite inappropriate."

"We shall continue to look to the Minister for information and guidance, but shall not be precluded from thinking for ourselves."

We look forward to further articles from Sir George's pen.

If you have a rather dull subject and wish it written in an informative but lighter vein, ask S. L. G. Beaufoy to write it. He has chosen for his subject "Inquiries under Planning Legislation," which is an historical sketch of the subject but at the same time contains many hints which are bound to prove of use to local government officials dealing with the subject.

A pictorial study of the River Tees presents some of the types of riparian development from the source to the mouth of this important river.

Professor F. Stuart Chapin, of the University of North Carolina, contributes a timely and thoughtful article on a problem which is becoming more and more pressing each year: "How big should a City be?" His research into the subject has been very extensive, but if you expect to find a definite figure you are naturally bound to be disappointed. I do not think any person who has really studied the subject, as has Professor Chapin, could come down on a definite figure.

A short illustrated article entitled "A Lesson from Greece," by Alasdair C. Sutherland, offers comments on a few contemporary planning problems which appear to have some affinity with those of classical Greece. It is interesting study and full of common sense.

This volume lives up to the standard set by the previous issues. Let us hope there may be many more to follow.

M. E. T.

# News of the BUILDING INDUSTRY

## INTEREST

### CHESTER BUILDING EXHIBITION

The Deputy Mayor, P. H. Lawson, F.R.I.B.A., F.S.A., Chairman of the Housing Committee, presided at the opening, by the Minister of Works, of the M.O.W. Building Exhibition, Little Roodee, Chester, on Friday, June 22.

Some manufacturers do not like showing at these exhibitions, preferring the larger ones such as the Building Exhibition, the Public Works and the B.I.F. But there can be little question that these M.O.W. Exhibitions of strictly limited size provide local builders and sub-contractors with the opportunity of seeing recent developments on their own doorsteps. Moreover the size of these exhibitions is such that thorough inspection is possible within the scope of a day visit.

Many of the exhibits had of course been shown before in other parts of the country. But there was enough fresh material to interest even hard travelling press hawks.

Notable was the new M.O.W. Building Research and Housing Exhibit. This shows by means of charts, press button models and automatic films, how recent research can be applied to house building. One of many sections of this exhibit shows a variety of hardwoods which are available and workable with hand tools and whose cost, over that of soft wood, can be largely set off by savings in finish. Suitable positions such as cills, thresholds, stairs, etc., are indicated for each of about 26 hardwoods on an automatically lit panel which refers to the samples displayed.

A feature of this exhibition which attracted considerable interest was the bricklaying competition for apprentices from technical schools. Prizes were to be presented by Lord Morrison at the end of the week.

The largest single exhibit which attracted much attention both during erection and when in position was a new French monotor crane, the C.A.C.L. type G.12, shown by Machinery (Continental) Limited. Nine of these cranes have already been purchased by leading contractors in this country. The crane exhibited had been bought by R. Costain Ltd. It is understood that no import duties are charged on these cranes as treasury licences have been granted. The operating height of the crane can be varied by adding sections to the tower. Maximum working height is 65 ft. 6 in., with a swing radius of 52 ft. 6 in. Minimum working height is 21 ft. 4 in. Erection is by means of a secondary jib. Lack of space on the site made it impracticable to include a "showing" for demonstrating plant. This feature which was included at the Warwick exhibition might be revived in future exhibitions.

Of labour saving plant—to use the new description coined by the L.M.B.A.—there was a good selection, with several new or relatively recent developments on show.

The following were amongst new products noted as worth further investigation:

Adjustable shuttering clamps available in four sizes, all of which are interchangeable, for columns having sides measuring up to 18 in., 30 in., 42 in., and 54 in. All moving parts are non-losable. No wedges, chains or packings are necessary. For all sizes up to 54 in. a set of clamps costs 48s., plus 10 per cent. Samples are available on request from Wiltor Ltd.

Red Circle Ltd., in conjunction with the Dunlop Rubber Company Ltd., were showing a rubber hopper for concrete mixers. The example shown had been in use for eighteen months and appeared to be still in excellent working condition. The advantages of this hopper are that it is practically self-cleaning,

requires no banging and is said to discharge into the drum 50 per cent. faster.

The Parker "Carry-Boom," for concrete placing, developed at the M.O.W. Field Test Unit, was shown by Frederick Parker Ltd. This device consists of a light welded boom with a working span and radius of some 38 odd feet. One end is carried on a wheeled carriage. The boom carries a 7 cu. ft. skip which can be travelled, raised, lowered and emptied by hand. Thus giving a complete coverage of a site for pair of small houses direct from the mixer position. The price of the equipment is £185.

A newcomer in the small concrete mixer field is the Dixon C.M.8 mixer by Dixon Hawkesworth Ltd. Designed for jobbing work, the mixer has 3 cu. ft. capacity, is driven by air cooled petrol engine and is said to produce 20 sq. yds per 8-hour day. Also of interest on this stand was a new 3 ft. petrol driven roller with two rolls, the rear one capable of taking water ballast. Weight is 8 to 10 cwt. Price is £185.

THE LICENSING SYSTEM for unwrought copper, lead and zinc is extended from July 2 to include licensing of scrap and residues of these metals under the Copper, Lead and Zinc Distribution Order 1951 (S.S.I. 1951, No. 981) which necessitates a licence to acquire, treat, use and consume copper, lead, lead alloys and zinc; and any scrap or residue of these metals or their alloys.

The new order revokes the Control of Non-Ferrous Metals No. 35 (Copper, Lead and Zinc) Order 1949 (S.I. 1949, No. 2087) but any licence under that order remains valid.

THE BOARD OF TRADE announce that in future an exporter in another country may, in cases where his own Government require to be satisfied that strategic goods ordered by an importer in the United Kingdom will in fact be imported into the United Kingdom, ask his customer to produce an Import Certificate.

Any importer who receives such a request should apply to the Board of Trade Import Licensing Branch, Romney House, Tufton Street, London, S.W.1.

If an Import Certificate is issued to him, the importer will be bound by the provisions of the Control of Goods (Import Certificates) Order, 1951 which came into force on June 14, and will be liable to penalties if the goods are diverted to any other destination without the approval of the Board of Trade.

THE ATLAS STONE COMPANY LTD. have increased the current selling prices of Asbestos Cement building materials by 9% as from June 11. The increase was authorised by the M.O.W.

THE INTERNATIONAL COMMISSION ON ILLUMINATION is to hold its 12th session in Stockholm from June 26 to July 7. Street lighting is one subject on which lively and instructive discussion is expected.

THE ANGLO-AMERICAN COUNCIL ON PRODUCTIVITY is sending a special mission to the United States to explore the effective use of scarce materials with the engineering and allied industries there and to make suggestions as to how British industry can improve its industrial housekeeping and use scarce materials in the strictest possible way. This Group is concerned primarily with the immediate short-term problem but would wish also to be put in touch with any long-term steps (involving basic changes in design) being currently planned.

A "MACHINES FOR THE MODERN BUILDER" EXHIBITION, which the Ministry of Works, in association with the Building Industry, have organised will be held at Middlesbrough from July 13 to 21.

Lord Morrison, Parliamentary Secretary to the Ministry of Works will open the Exhibition at 3 p.m. on Friday, July 13. The Mayor of Middlesbrough, Alderman B. Ramsey, J.P., will preside at the ceremony.

The Exhibition will be held on open ground at the end of Levick Crescent, Whinney Banks, Middlesbrough. Admission daily (except Sunday) 11.30 a.m.-7.30 p.m., price 1s.

Some of the latest types of building plant will be shown. On view, also, will be a Ministry of Works exhibit, "Building Research and Housing," shown for the first time at the Ministry's "Modern Building" Exhibition at Chester. Middlesbrough Corporation will stage an exhibit showing its own Works Department's activities.

THE C.U.J.C. INFORMATION CENTRE, recently opened at 257 Deansgate, Manchester, is the first of its kind designed to provide for local authorities and the public impartial technical advice on the selection and use of modern domestic solid fuel appliances.

The showroom is not a "sales centre" and the inquirer will feel no obligation to purchase.

The appliances on show are representative of the differences type ranges now in production and cover types of open fires, stoves, cooking ranges and independent hot-water boilers. From time to time they will be changed for other makes, but literature on all appliances—whether or not on show—will always be available.

Demonstrations at the showroom will advise local authorities and the public on the correct type of appliances to suit their particular needs. Inquirers will be given a list of the Panel members in the Region and from this list they will be able to select the firm from whom further inquiries and purchase of the desired equipment can be made.

It is proposed to open similar centres in Glasgow, Newcastle, Leeds, Nottingham, Birmingham, Cambridge, Cardiff and Bristol.

AN INVESTIGATION BY THE MINISTRY OF WORKS into the manufacture in this country of concrete blocks is now published by H.M. Stationery Office as a Special Report in the series of National Building Studies. ("Concrete Block-Making Machines," by A. Sobolev, B.Sc. (Eng.), A.M.I.MECH.E., A.M.I.STRUCT.E., National Building Studies, Special Report No. 17. H.M.S.O., price 1s.)

In the course of the investigation 28 firms were visited in England and Scotland—22 engaged in making concrete blocks, and 6 manufacturers of machines used in these processes—The Report gives descriptions, comparative figures and critical evaluations of performance for the various concrete block-making methods in use in this country.

The machines examined ranged from the simple box mould and tamper, costing as little as £5 with an average daily output of 350 blocks, to a fully automatic type, costing £14,000 and capable of an output of 7,500 blocks a day.

The Report concludes that there are two main sources of waste: man-power in handling blocks, and timber for the great number of wooden pallets needed to support the "green" blocks in nearly all the machines used.

Among other factors considered in the Report are transport costs, and the manpower used in the "non-productive" operations—handling the raw material, stacking the green blocks for curing, and the cleaning of used pallets.



# GOOD, BAD OR INDIFFERENT?

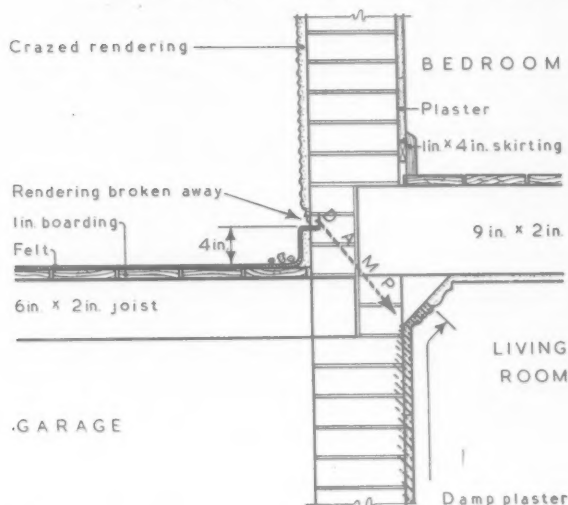


Fig. 1

No. 40

By A. FOREMAN

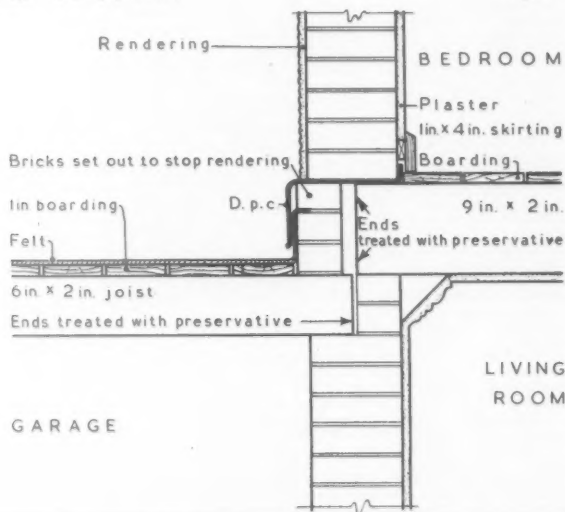
## Dampness.

I was recently called to inspect a house in which there were serious signs of dampness showing in the living room on the cornice and upper parts of the outside wall where a garage adjoined. Fig. 1 shows the general construction of the wall at the junction with the garage roof and where the dampness was showing; from the diagram it will be seen, as I saw on the site, that the trouble was due to the failure to make a proper junction where the rendering of the wall met the roofing felt of the roof. The rendering had broken away as might have been expected as it had apparently been chased to receive the felt; the chase was very wide and had been filled with some very sandy mortar after the felt had been tucked in and perhaps the rendering had been made good but that seemed doubtful. When the plaster and the cornice were removed the joist ends were so wet that they were showing signs of rotting. The wall itself was not very good brickwork and the part above the garage roof level, which

faced the South-west and was very exposed, seemed to be fairly damp in the bedroom, due I suspect, to the quality of the rendering which was very smooth and had crazed badly.

Fig. 2 shows the construction which I would have liked to have seen for this position with, of course, a more suitable rendering than had been used if a cavity wall had not been employed which would have been so much better. The essential points of construction shown in this diagram are the combined d.p.c. and flashing and the treatment of the brickwork just below the rendering. This combined d.p.c. and flashing forms a continuous tray, being turned up behind the skirting on the inside, so that any moisture falling within the wall must be diverted outwards and also the upstand of the felt is given a proper flashing. Note also that the few courses of brickwork just below the lower end of the rendering are projected sufficiently to support the lower edge of the rendering. The joists ends, since they are built-in, would have benefited greatly had they received a preservative treatment where they are in the brickwork.

Fig. 2



## HELPFUL HINTS ON CEMENT WORK

The following notes, based on questions asked following showings of the Cementone "Helpful Hints" Film, have been sent to us by Messrs. Joseph Freeman. As a result of reactions to the film, Messrs. Freeman propose to develop the service provided by the discussions for architects and members of the Building Trade.

Approximately 1,800 questions were received and answered following last winter's showing of the Cementone "Helpful Hints" film. The emphasis was on cement and painting work and questions on the problem of dusting cement floors, cracking renderings and flaking paint-work predominated.

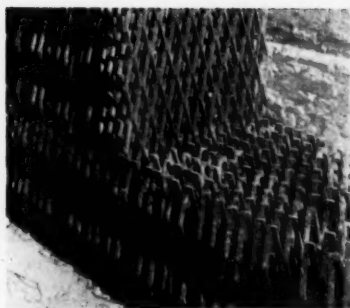
From the discussions which took place on granolithic flooring work it was clear that few appreciate the necessity to keep gaugings stiff and low in water content and that water content was seldom controlled by supervision or that architects cover that point in their specifications.

Poor grading of granite aggregates was another point raised. It appears that the general habit is to use  $\frac{1}{2}$  in. and down granite chippings with an uncontrolled amount of fine granite dust unevenly mixed with the coarse material. Or, if the amount of granite dust is stipulated, it is apparently common practice to load both the  $\frac{1}{2}$  in. clean granite chippings and fine dust on one lorry

with the result that by the time it is tipped on site the coarse and fine matter is unevenly mixed and all grading control completely lost. Dusting floors are not uncommon and there appears to be a need for the tightening up of specifications by stipulating the control of water content and the grading of the aggregate. Granite suppliers might well institute a method of fool-proof grading of aggregates supplied for granolithic work.

Apparently too it is common for sand and cement floors to dust, the generally accepted practice being to use any type of clean sand irrespective of grading or particle size. As the majority of sands





### BURGLAR PROOF

Expanded steel reinforcement used in the walls of vaults at the Federal Reserve Bank of San Francisco. Concrete is poured into the meshwork to form an 18 inch wall. The reinforcement known as Steelcrete is made from  $\frac{1}{8}$  or  $\frac{1}{4}$  inch thick steel plate, by the Wheeling Corrugating Company.

(Continued from page 775)

consist mainly of fine particles passing a  $\frac{1}{4}$  in. sieve the excess of fine matter in combination with the common tendency to use too much water in gauging appears to be the main reason for the dusting failures. In discussing the problem the use of an exceptionally coarse sand or true grit has been recommended and in cases where heavy traffic is anticipated a  $\frac{1}{4}$  in. or  $\frac{1}{2}$  in. and down graded crushed shingle has been advised mixed in the proportion of 2 parts of shingle to 1 part of clean, sharp, washed sand to 1 part of cement.

Questions on cement rendering work were mainly confined to external treatments and despite the valuable research work which has been carried out by the Building Research Station and their general recommendation that it was preferable to use weak mixture renderings, surprisingly few have apparently followed the advice given. Seemingly, the general tendency is to follow pre-war practice in applying renderings composed of 2½ to 3 parts of sand to 1 part of cement, the richness of such gaugings giving rise to cracking and crazing and resulting in later rain penetration. The use of renderings to a strength of 6 parts of clean, sharp, washed sand to 1 part of hydrated lime to 1 part of cement was recommended. But it was obvious from the questions that many Architects are adverse to specifying hydrated lime in cement mixes. There also appears to be a doubt that weak mix renderings give sufficient weather protection. The large number of questions and enquiries received on the damp-proofing of houses where external renderings had cracked and crazed revealed the extent to which this problem applies in Great Britain and the degree of damage which has followed the pre-war practice in building in solid walls with an external covering of strongly gauged cement rendering or roughcast finishes. In view of the problem today of making such structures watertight Architects might well review their external rendering specifications and Contractors might change their methods by bringing them into line with practices which have been proved satisfactory on the Continent over a long period of years.

A complete switch from soft plaster to hard plaster finishes has taken place in the last 15 years. But this change in practice while eliminating one series of decorative problems has brought others in its trail.

In certain cases the highly trowelled and smooth hard plaster finishes of today seem to bring difficulties in obtaining good adhesion of the decorative material. It would also appear that many Contractors have yet to make sufficient time allowance for the hard plaster finishes to dry out to take a gloss paint finish. Generally speaking, flaking of decorative coatings from hard plaster finishes seem to be mainly due to:—

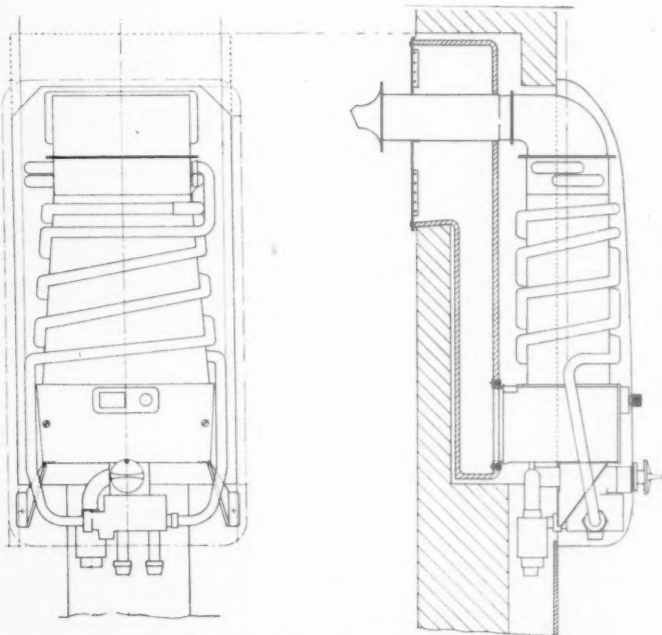
- (a) Use of unsuitable primers.
- (b) Painting before the plaster had dried out sufficiently.
- (c) Condensation after decoration owing to the low absorption rate of certain hard plasters.
- (d) Saponification of the paint film from the attack of alkalis in the plaster.
- (e) Decorating during weather conditions which produce heavy condensation.

With knowledge of the properties of oil emulsion paints increasing and the necessity for using alkali resisting paints for certain types of new plaster finishes, the failure rate should be considerably reduced, but since it is common practice today to continue decorating work the year round many contractors need to take more care

in ensuring that work is stopped during inclement weather.

From the questions raised it was obvious that there are far more failures today in comparison with pre-war days due to the practice of continuing work during extremes of cold, foggy periods, when excessive condensation occurs, and during and immediately after rainfall. The cessation of external painting work during the War years has produced problems both in the preparation of surfaces and from the practice today, in an endeavour to cut cost, of attempting to re-decorate with two coats instead of the previously accepted sequence of three to four coats. The discussions which took place on external painting work revealed that licence restrictions, and in some cases the client's objection to the necessary but high cost of thorough preparation of surfaces to be painted, has resulted in a large number of flaking failures, the misguided but forced attempt to reduce on cost by skipping preparatory work giving rise to excessive flaking from old paint work left on the surface disintegrating or pulling away from the surface and carrying with it the newly applied paint finishes.

### A NEW ASCOT WATER HEATER



The new 715 heater recently shown by Ascot Water Heaters Ltd., at the Building Centre is expected to be in full production in a year's time. The heater is totally enclosed and is designed for building into external walls. A specially designed combined air intake and extract serves a balanced flue. The problems associated with this balanced flue design were, first, prevention of re-circulation of waste flue gases due to varying wind direction and, second, the effects of unstable pressures caused by eddies. Local changes of about .007 in. water gauge would make the heater unworkable. But extensive laboratory and district tests have convinced the makers that the specially designed terminal is a practical solution. Photographs and further notes on size and performance of this heater will be published in a future issue of *Mosaics*.

## TWENTY - TO - ONE TABLE

### A fixture with swivel seats

Anyone who has "dished-up" after a meal on the lower deck of a battleship and then has had to scrub decks for "rounds" will appreciate the inconvenience—to put it mildly—of getting chairs or benches out of the way to give elbow room for scrubbing.

The same conditions may be said to apply in canteens and other places where large numbers have to be seated without waste of space. Apart from ease of access to the floor for cleaning, the tables illustrated, enable seats not in use to be swung close into the table.

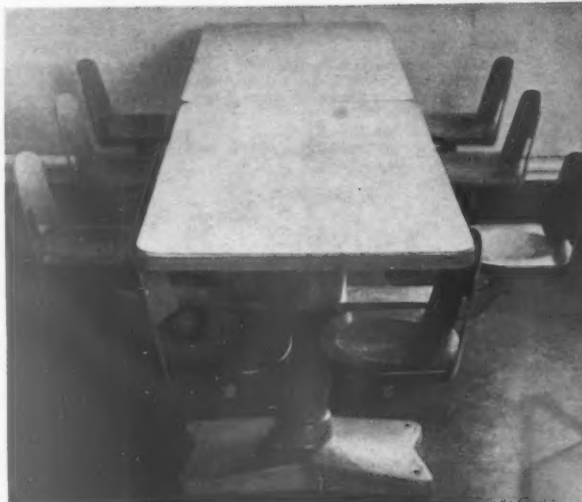
Each table unit has four swivel seats. Dimensions are as follow:—Table width 26 in., length 46 in., height 31 in., height of seat from floor  $19\frac{1}{2}$  in., total width with seats fully extended 59 in. The base plates measure 9 in.  $\times$  21 in.

Spacing between tables can be varied to suit circumstances. Minimum spacings are:—3 ft. 9 in. between long sides; 3 in. between short end and wall; 2 ft. 3 in. between long side and wall behind seats.

Tables can be butted up to each other end to end.

The construction is all steel with cast base. Tops are of plastic sheet and seats are of oak.

It is claimed that the increase in seating capacity made comfortably possible by this method of seating is 10 per cent. The tables have been installed in the London Transport canteens at Vauxhall and Waterloo.



## TESTING EQUIPMENT

AT THE

### CEMENT AND CONCRETE ASSOCIATION STRUCTURES LABORATORY

WEXHAM SPRINGS

The layout of the Cement and Concrete Association's Structures Laboratory was illustrated in last week's A. & B. N. Special apparatus has been developed for making tests on large structural elements, and a universal testing machine, capable of being arranged in as many ways as possible, has been constructed for this purpose. The testing equipment consists essentially of a base plate and a frame designed on the meccano principle so that loads can be applied by hydraulic jacks and the reactions taken by the frame. Part of the laboratory floor forms the base plate and has been isolated from the structure of the building by a bituminous joint. Deformations of the floor during testing will thus be independent of the rest of the laboratory. The "base plate" section of floor is of reinforced concrete 2 ft. 6 in. thick and 40 ft.  $\times$  27 ft. in plan. The reinforcement consists of 1 in. bars at 6 in. centres in both directions at the bottom of the slab and 1 in. bars at 21 in. centres at the top. See section page 779. Cast into the floor are 263 steel anchor sockets screwed with a  $1\frac{1}{2}$  in. diameter thread and designed to withstand an upward force of 5 tons.

A system of steel columns and beams in which a number of hole patterns have been drilled, make up the parts of the reaction framework. The hole patterns enable the steelwork to be put together in a variety of ways for different tests and additional members or new framework may be added if needed.

The framework can be erected to enclose the experimental structure so that point or distributed loads can be applied directly. With slight adjustments it can be used for direct compression tests on columns or for racking tests on frames. By erecting two separate frames and fixing a cross-member on the experimental specimen to take the thrust of two jacks, torsion tests can be made. It is also possible to make tests on large beams by placing them sideways on the floor and loading them by jacks acting sideways and also anchored to the floor.

For the first tests that are being carried out (on interconnected pre-stressed beams) the frame has been erected as shown in the drawings on page 778. The four main beams (24 in.  $\times$  7 $\frac{1}{2}$  in. R.S.J.) form a rectangle supported by columns (8 in.  $\times$  3 $\frac{1}{2}$  in. channel) at the corners, which are in turn attached to short ground beams (10 in.  $\times$  3 $\frac{1}{2}$  in. channel). The whole frame is held down to the floor by a system of saddle beams (10 in.  $\times$  4 $\frac{1}{2}$  in. R.S.J.), 2 in. diameter connecting rods and welded distributing beams, each distributing beam picking up two anchor sockets. With this particular arrangement the whole frame is held to the floor by 32 anchor sockets.

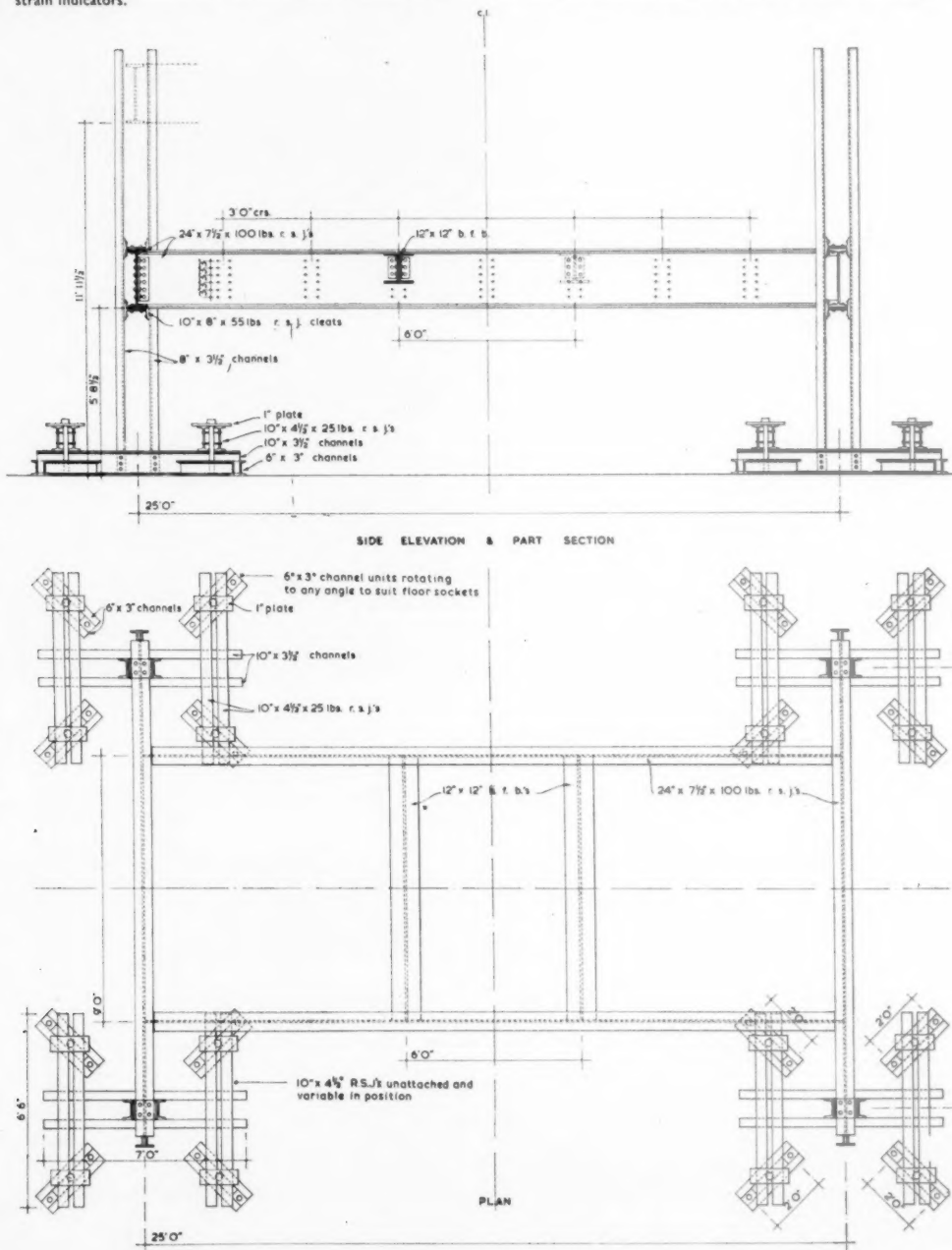
The load is applied to the test specimen by hydraulic jacks which are connected to the main frame by 12 in.  $\times$  12 in. broad flange beams

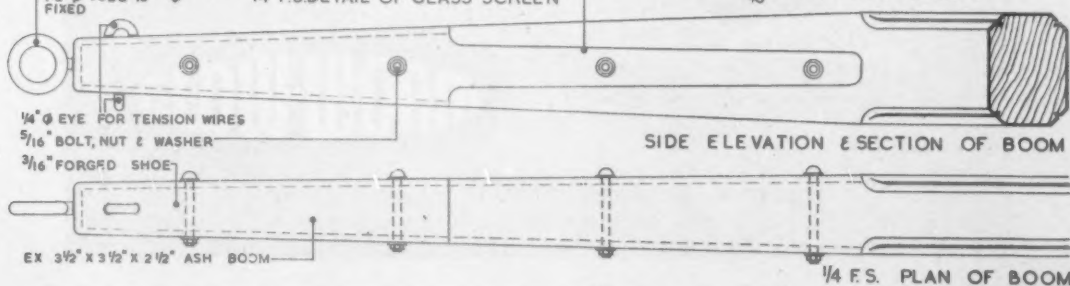
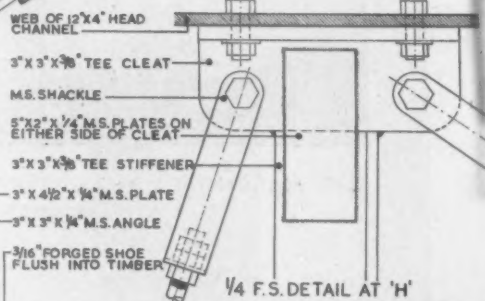
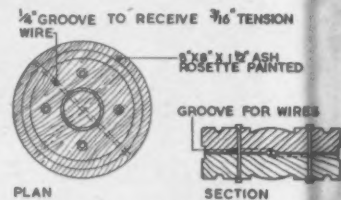
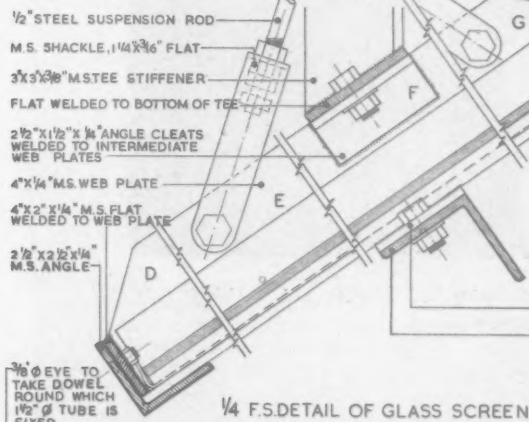
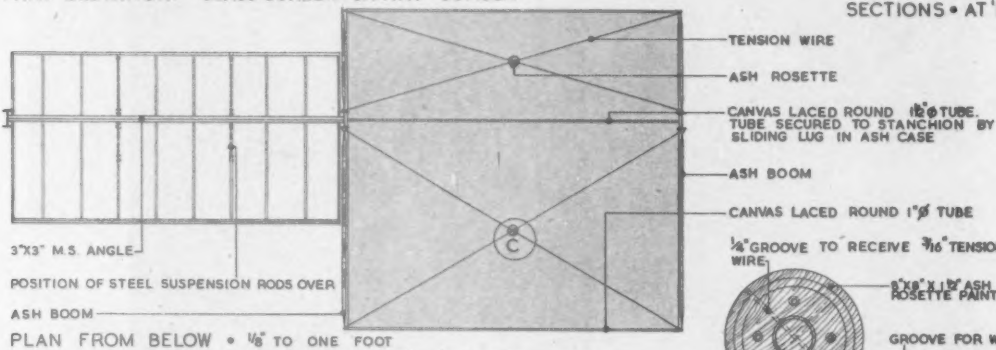
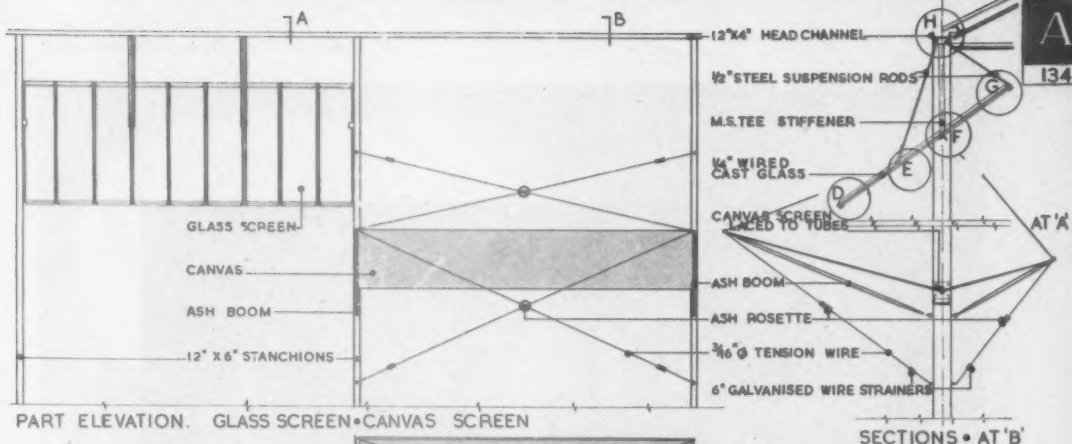
which provide a large seating area for the jacks. See drawings. The main beams may be adjusted at heights varying from about 4 ft. 8 in. to 12 ft. from the floor by increments of  $1\frac{1}{2}$  in. and the secondary broad flange beams may be adjusted over a range of 9 in.  $\times$  3 in. increments.

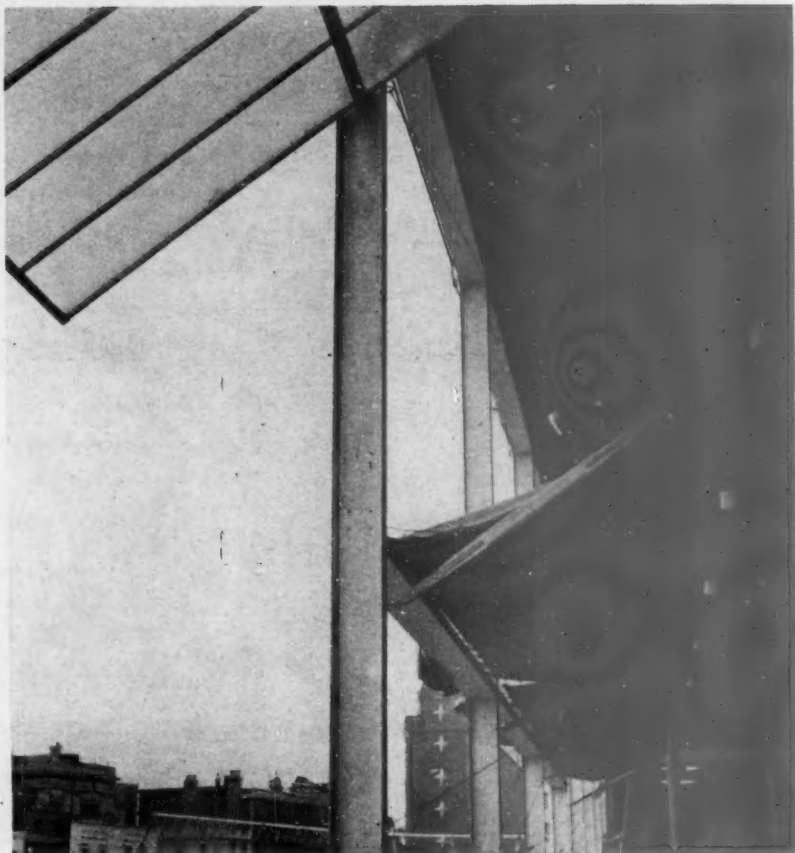
The equipment has been designed to operate six double-acting jacks, each with an independent pressure-reducing valve. Infinite variation of the force applied by the jack is allowed by the provision of a small back-pressure. The jacks have a 6 in. diameter piston and a  $4\frac{1}{2}$  in. diameter piston rod and are designed to push with a force up to 50 tons and are provided with detachable rings for pulling with a force of up to 21 tons.

Although the hydraulic jacks will be used in most experimental work, loads can also be applied by means of dead weights or by air bags acting between the specimen and the reaction framework.

For strain measurement on test specimens it is intended to use electrical resistance methods, acoustic gauges and mechanical dial gauge strain indicators.





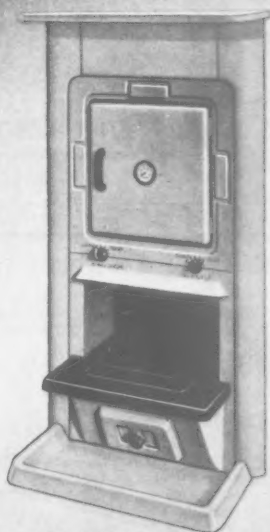


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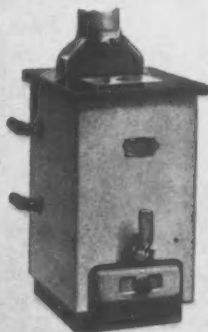
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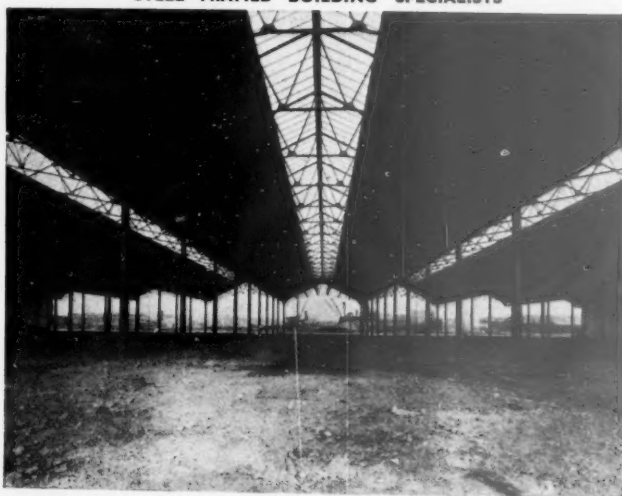
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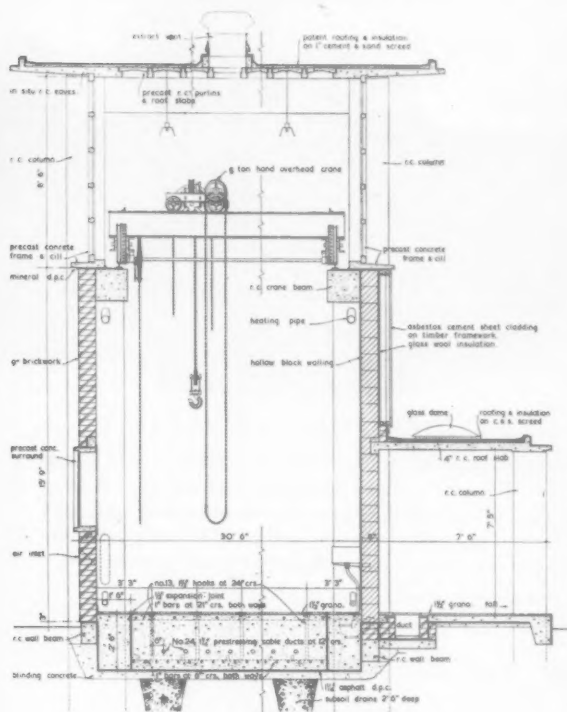
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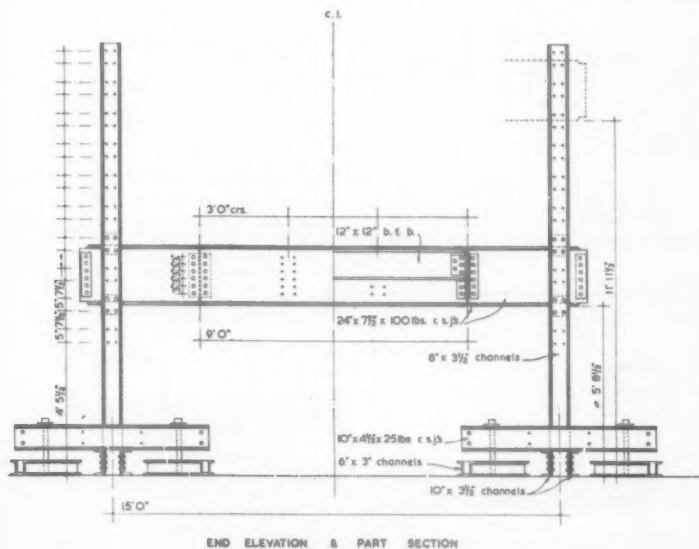
Telegrams : WALKERS, WALSALL.

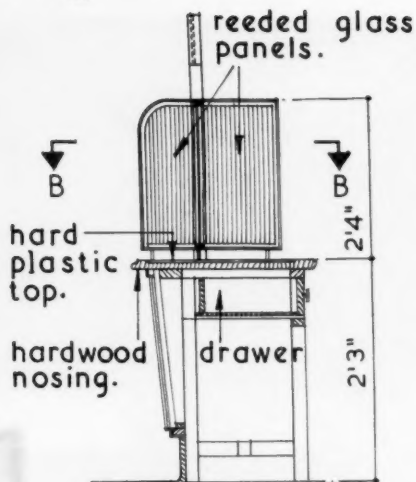
London Office : 66, Victoria Street, S.W.1.

Telephone : WALSALL 3136, 3137, 3138, 3139.  
Telephone : Victoria 6049.



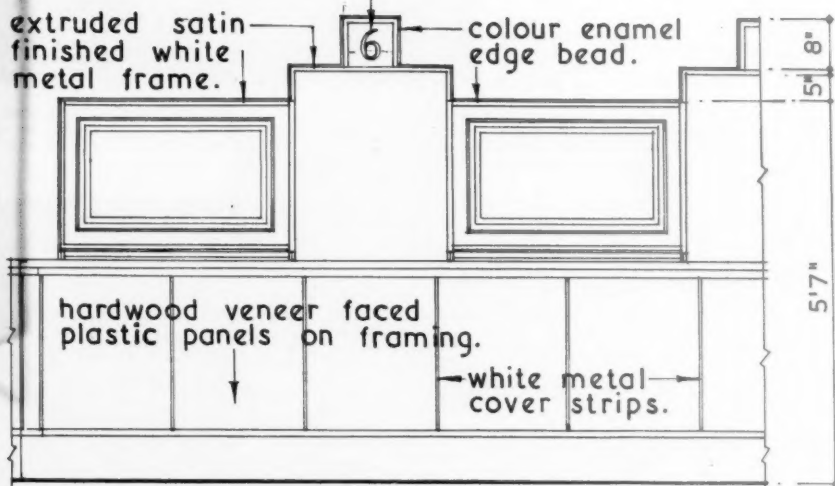
Above is a cross-section of the structures laboratory and below, left, a detail of the test frame. The photograph, top right, shows the interior of the laboratory with the test frame in position and the hydraulic control panel in the foreground. The centre picture shows the method of forming prestressing ducts in the test floor with the aid of inflatable rubber tube. Below, the picture shows a bridge deck specimen in position with pressure capsules for measuring reaction and tubular steel reference frame with deflection gauges attached.



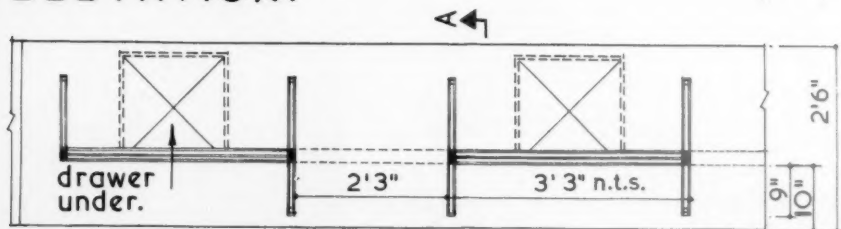


SECTION A-A

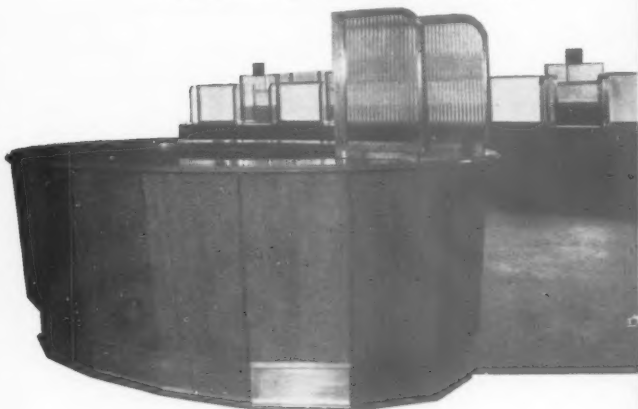
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ELEVATION.



PLAN AT B-B.



COUNTER DETAIL

The new passport office at Clive House comprises a room 62 ft. long  $\times$  51 ft. wide with a central information desk and counters along one side. Upholstered waiting benches are provided at right angles to each counter position. The construction and finish of the counters are shown in the accompanying detail.

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Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the

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### BUILDING

**AUSTRALIA—STATE ELECTRICITY COMMISSION OF VICTORIA.** (a) Fabrication, supply and delivery of galvanised, or alternatively, ungalvanised steel transmission towers. (b) Agent-General for Victoria, London. (c) July 25.

**BERKSHIRE AND READING FIRE AUTHORITY.** (a) 2 pairs of firemen's houses, Didcot. (b) County Architect, Wilton House, Parkside Road, Reading. (c) 2 Gns. (e) July 11.

**BRIDGNORTH B.C.** (a) 4 shops with flats above on Sydney Cottage Estate, with installation of water drainage and other works. (b) Borough Surveyor, College House. (c) 2 Gns.

**BRIGHTON B.C.** (a) 62 flats in three 3-storey blocks and 8 garages and 3 stores at Bates Nursery site. (b) Borough Engineer, 26-30 King's Road. (c) 2 Gns. (e) July 11.

**BRIGHTON B.C.** (a) Jig and tool factory, Hollingbury Industrial Area. (b) Borough Engineer, 26-30 King's Road. (c) 2 Gns. (e) July 11.

**BRISTOL C.C.** (a) Alterations and additions to St. Philips Marsh Nursery School. (b) City Architect, Eagle House, Colston Avenue. (c) 2 Gns. (d) June 29. (e) July 16.

**CARDIGANSHIRE C.C.** (a) Block of two temporary classrooms—area of rooms at Feinfach. (b) County Architect, County Hall, Aberayron. (c) June 30.

**DARTFORD R.C.** (a) 22 houses, Swanley. (b) Engineer and Surveyor, Council Offices, West Hill. (c) 2 Gns.

**DUNSTABLE B.C.** (a) 16 houses. (b) Borough Surveyor, Municipal Offices. (c) 2 Gns. (e) July 9.

**EPHINGHAM R.C.** (a) 10 houses at The Osleys, Harlow, and (2) 10 houses at Hoe Lane, Palmers Grove, Nazeing. (b) Messrs. Tooley and Foster, Midland Bank Chambers, Buckhurst Hill. (d) July 2, with a list of work recently carried out.

**ERPINGHAM R.C.** (a) 2 houses at Thornage and 2 at Weybourn. (b) Architect and Surveyor, Council Offices, St. Peter's Road, Sheringham. (c) 2 Gns. (e) July 10.

**ESSEX C.C.** (a) House for farm manager at Essex Institute of Agriculture, Writtle. (b) County Architect, County Hall, Chelmsford. (d) June 30. Approx. cost £2,850.

**FRIERN BARNET U.C.** (a) Small maintenance depot, comprising two work-shops, messroom and lavatory at Colney Hatch Lane. (b) Messrs. K. R. Smith & W. W. Atkinson, 10 Bayley Street, Bedford Square, W.C.1. (c) 2 Gns. (d) July 3.

**HALIFAX B.C.** (a) Alterations and additions of sanitary and shower accommodation at Clare Hall Secondary School. (b) Borough Engineer, Crossley Street. (c) 2 Gns. (e) July 3.

**HESTON AND ISLEWORTH B.C.** (a) 8 flats and 6 shops, Hounslow West Estate. (b) Borough Engineer, 88 Lampton Road, Hounslow. (c) 3 Gns. (e) July 26.

address it is the same as the locality given in the heading, (c) deposit, (d) last date for application, (e) last date and time for submission of tenders. Full details of contracts marked \* are given in the advertisement section.



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**HARROW U.C.** (a) 74 flats, 99 houses and a block of 4 shops with maisonettes above, Northolt Racecourse Estate. (b) Engineer and Surveyor, Council Offices, Uxbridge Road, Stanmore. (c) £2. (d) July 2. (e) July 23.

**HUNTINGDON C.C.** (a) Aged persons' home, with staff and ancillary accommodation, Stanground. (b) County Architect, County Buildings. (c) July 16.

**ILKLEY U.C.** (a) 26 houses and 4 aged persons' flats at Ilkley and Menston. (b) Council's Surveyor, Chantry Drive. (c) 3 Gns. (e) July 16.

**IRWELL VALLEY WATER BOARD.** (a) Construction of a masonry-faced filter house and a pair of houses, etc., at Love Clough, near Rawtenstall. (b) Engineer and Manager, Water Office, Parsons Lane, Bury. (c) 2 Gns. (e) July 30.

**KIDSGROVE U.C.** (a) (Contract A) 22 houses, (B) 16 houses, (C) 18 houses, (D) 22 houses, (E) 22 houses, (F) 10 houses, (G) 24 houses, on Lower Ash and Hollins Farm Estate. (b) Architect and Surveyor, Town Hall. (c) 3 Gns. (e) July 23.

**LONDON-TOTTENHAM B.C.** (a) 23 lock-up garages at White Hart Lane and 6 lock-up garages at Cornwall Road. (b) Borough Engineer, Town Hall, N.15. (c) 1 Gn. (d) July 2.

**MAIDENHEAD B.C.** (a) Public conveniences and parcels office at Park Street. (b) Borough Engineer, 14 Craufurd Rise. (c) 2 Gns. (e) July 18.

**MANCHESTER C.C.** (a) Erection of Phase I steelwork at multi-storey block and workshop, Openshaw College for Further Education. (b) City Architect, Town Hall. (c) 1 Gn. (e) July 18.

**MELTON MOWBRAY U.C.** (a) 18 houses on Asfordby and Nottingham Roads site. (b) Engineer and Surveyor, Egerton Lodge. (c) 2 Gns. (e) July 11.

**MERIDEN R.C.** (a) 64 houses, Balsall. (b) Mr. P. B. Herbert, Chartered Architect, Grosvenor Buildings, Steelhouse Lane, Birmingham, 4. (c) 2 Gns. (e) July 25. See page 23.

**NOTTINGHAM AND DISTRICT TECHNICAL COLLEGE.** (a) Light steel framed building. (b) Clerk to the Joint Education Committee, Education Office, South Parade. (d) Aug. 31. Approx. cost £500,000. See page 23.

**N. IRELAND-BELFAST R.C.** (a) 129 houses with streets, sewers and site works, Glengormley. (b) Council Office, 51 Lisburn Road. (c) 5 Gns. (e) July 18.

**NORFOLK E.C.** (a) Adaptation of former Friends' Meeting House as a branch library and repairs and decoration to adjoining cottage, at Downham Market. (b) Chief Education Officer, Stracey Road, Norwich. (d) July 4.

**NORTHAMPTONSHIRE.** (a) Erection of Roman Catholic secondary school, Corby. (b) Messrs. Gotech, Saunders & Surridge, Bank Chambers, Kettering. (d) July 1, with details of recent school or similar contracts carried out. (c) Aug. 2.

**NORTH RIDING E.C.** (a) Primary school, Romanby. (b) Secretary for Education, Education Offices, County Hall, Northallerton. (c) July 20.

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**NOTTINGHAM DIOCESE.** (a) (1) Reinforced concrete foundations, and (2) superstructure of school building, for primary school at Kingsbury Drive, Aspley. (b) Messrs. Reynolds & Scott, 9 Albert Square, Manchester, 2. (d) June 30.

**OLDHAM B.C.** (a) First stage, comprising foundations up to ground-floor level, drainage, etc., for new secondary school at Hathershaw. (b) Messrs. F. Thorpe & Whyman, Barclays Bank Chambers, Church Lane. (c) 2 Gns. (e) July 6.

**READING B.C.** (a) 2 pairs of houses, Salisbury Road. (b) Borough Architect, Town Hall. (c) 2 Gns. (e) July 16.

**RIPON C.C.** (a) 20 flats in 5 blocks on North Road site. (b) Messrs. Steel & Owen, 89 Albion Street, Leeds, 1. (c) 3 Gns. (e) July 7.

**ROCHDALE B.C.** (a) Adaptation and extension of "Kingsland," Manchester Road, to form home for aged persons. (b) Borough Surveyor, Town Hall. (e) July 17.

**RUGBY B.C.** (a) Attested dairy cattle house and sales ring at Cattle Market. (b) Borough Surveyor, Burford House, Church Walk. (c) 5 Gns. (e) July 9.

**SALFORD C.C.** (a) Demolition of conveniences and erection of a new sanitary block and alterations to nursery conveniences, at North Grecian Street School. (b) City Engineer, Town Hall. (c) 1 Gn. (e) July 11.

**SHEFFIELD C.C.** (a) Erection of The Brook secondary school. (b) City Architect, Town Hall. (c) £5. (e) July 13.

**SOUTHBOROUGH U.C.** (a) 3 shops with maisonettes above, Woolley Road. (b) Messrs. Howes & Jackman, 1 Verulam Buildings, Grays Inn Road, W.C.1. (c) 2 Gns. (e) July 14.

**TORQUAY B.C.** (a) Public conveniences and dressing accommodation at Stoodley Knowle Playing Fields. (b) Borough Surveyor, Town Hall. (c) 2 Gns. (d) July 7.

**UPPINGHAM R.C.** (a) 2 houses, Wardley, 6 at Wing, 8 houses with road works and sewerage pumping plant, at Caldecott, and 8 houses at South Luffenham, with water pumping plant. (b) Council's Clerk, Council Offices, Orange Street. (c) 3 Gns. (e) July 7.

**WARRINGTON R.C.** (a) (1) Extension of 2 bays to block of garages for Cleansing Department at Hawthorn Avenue, Woolston, and (2) new block of garages for Engineer and Surveyor's Department. (b) Engineer and Surveyor, Council Offices, Museum Street. (c) 2 Gns. (e) July 9.

**WEST RIDING C.C.** (a) Alterations and adaptations at Riversmead Secondary School, Grindleton. (b) County Architect, "Bishopgarth," Westfield Road, Wakefield. (c) 1 Gn. (e) July 9.

**WORTLEY R.C.** (a) Brick Shelter, Mortmley Park. (b) Engineer and Surveyor, Council Offices, Grenoside, near Sheffield. (e) July 9.

**WHITEHAVEN B.C.** (a) First stage of public halls, restaurant and museum, Lowther Street. (b) Town Clerk, Town Hall. (c) 2 Gns. (e) July 30.



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LONDON COUNTY COUNCIL. (1) War damage repairs. (2) Sir Walter St. John's School, Battersea. (3) Trollope & Sons (London) Ltd., West Halkin Street, S.W.1. (4) £41,808.

LONDON COUNTY COUNCIL. (1) Extensions. (2) Camberwell School of Arts and Crafts. (3) W. F. Marshall Ltd., London. (4) £16,215.

BATTERSEA, S.W. (1) Extensions. (2) Battersea Polytechnic. (3) James Carmichael (Contractors) Ltd., 331 Trinity Road, London, S.W.18. (4) £286,000.

FULHAM B.C. (1) Block of flats. (2) Sullivan Court. (3) John Laing & Son Ltd., Mill Hill, N.W.7. (4) £76,658.

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SWANSEA CORPORATION. (1) 115 houses. (2) Penlan Estate. (3) Direct Labour Department. (4) £153,673.

NEWARK CORPORATION. (1) 120 houses. (2) Hawton Road. (3) Geo. Wimpey & Co. Ltd., Nottingham. (4) £160,616. (1) 90 houses. (3) E. Coleman Ltd., 20 Diamond Avenue, East Kirby, Notts. (4) £121,293.

SURBITON B.C. (1) 144 flats. (2) Chessington Court Estate. (3) W. J. Simms, Sons & Cooke Ltd., 78 Mount Street, London, W.1. (4) £181,169.

LONDON, W.C. (1) Reinstatement of barristers' chambers etc. for Hon. Society of Lincoln's Inn. (2) Stone Buildings, W.C.2. (3) Holland & Hannen and Cubitts Ltd., Queen Anne's Gate, S.W.1. (4) About £60,000. Architects: Anderson, Forster & Wilcox, 9 Stone Buildings, Lincoln's Inn, W.C.2.

BURY, LANCs. (1) New R.C. School. (2) Hardmans-in-the-Fields. (3) John Tinline Ltd., Parker Street Sawmills, Bury. Architect: R. Byron, 9 Victoria Buildings, Silver Street, Bury.

HULL CORPORATION. (1) 102 houses. (2) Bilton Grange Estate. (3) Myton Ltd., Clough Road, Hull. (1) 40 houses. (2) Bilton Grange Estate. (3) A. E. Jenkinson, 60 Anlaby Park Road North, Hull.

LINCOLN CITY COUNCIL. (1) 82 houses. (2) Hartsholme Estate. (3) Direct Labour Organisation. (4) £107,016.

READING CORPORATION. (1) 60 flats. (2) Goshbrook Road. (3) Boyd & Murley Ltd., 87 London Street, Reading. (4) £101,540.

LONDON, E.C. (1) Rebuilding at Pump Court. (2) Middle Temple. (3) Dove Bros. Ltd., Cloudesley Place, London, N.1. (4) About £60,000. Architect: Edward Maufe, 139 Old Church Street, London, S.W.3.

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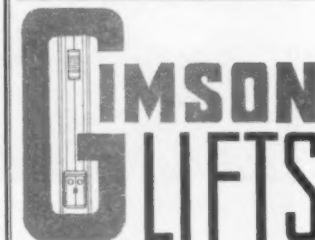
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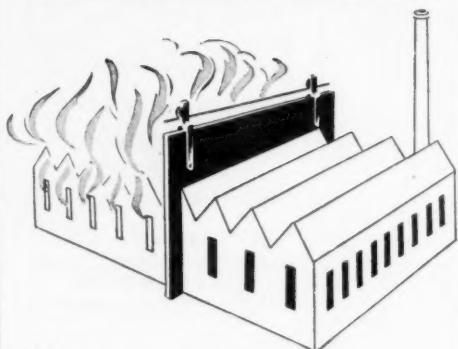


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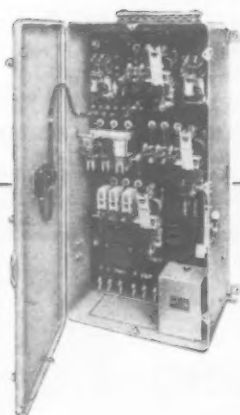


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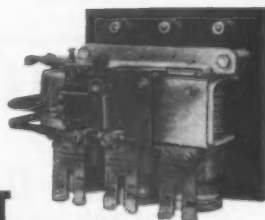
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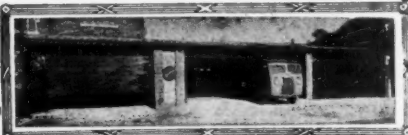
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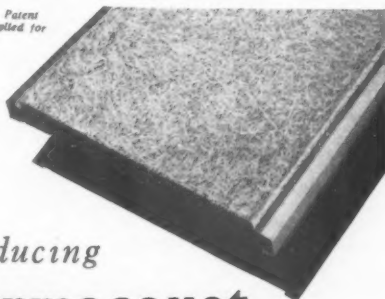
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addition of 10 p.c. on flat £600 and 7½ p.c. on  
remainder.

Application forms, to be returned by 31st July,  
1951, obtainable from Architect to the Council,  
County Hall, S.E.1, enclosing stamped addressed  
foolscap envelope, and quoting AR/EK/G. (745).  
[5533]

### AMENDED ADVERTISEMENT.

#### CARDIGANSHIRE COUNTY PLANNING COMMITTEE.

#### APPOINTMENT OF PLANNING ASSISTANT.

**APPLICATIONS** are invited for the post of  
**PLANNING ASSISTANT** in the County Planning  
Department at a salary in accordance with  
A.P.T. Grade V (£520-£570).

Applicants should have passed at least the Inter-  
mediate Examination of the T.P.I., R.I.B.A.,  
R.I.C.S., or equivalent examinations, should be ex-  
perienced in the preparation of Development Plans  
and Planning Surveys and experience in the super-  
vision of staff is essential. The appointment will  
be subject to—

- i. National Joint Council Conditions of Service.
- ii. The provision of the Local Government Super-  
annuation Act, 1937.
- iii. The passing of a satisfactory medical exami-  
nation.

One month's notice in writing on either side.  
The Council cannot undertake to provide housing  
accommodation for the person appointed.

Applicants should give particulars of age, edu-  
cation, technical training, qualifications, experience,  
present salary, present and previous appointments,  
which together with the names of two referees, must  
reach the undersigned not later than noon on Tues-  
day, 10th July, 1951.

J. E. R. CARSON.

Clerk of the County Council.  
Cambrian Chambers, Aberystwyth.  
16th June, 1951. [5553]

## MINISTRY OF WORKS.

**ARCHITECTURAL ASSISTANTS** are required  
for drawing office duties at Aldermaston, near  
Reading, Berks.

Candidates should have had a recognised Archi-  
tectural training and four experience.  
Hostel accommodation adjacent to the site is  
available for men at a reasonable cost, and there  
is a possibility of housing being available in the  
near future.

Salary on range £320 to £545 per annum accord-  
ing to age and experience.

Apply in writing, stating age and full details of  
experience, to Chief Architect, Ministry of Works,  
Abell House, John Isip Street, London, S.W.1,  
quoting reference WG10/BP., on envelope and  
application. [5542]

## BOROUGH OF WILLESDEN.

### BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

#### APPOINTMENT OF ARCHITECTURAL STAFF.

**APPLICATIONS** are invited for the following  
appointments:—

**1. ARCHITECTURAL ASSISTANT, Grade  
A.P.T. VI.** The appointment will, in the first in-  
stance, be on the Temporary Establishment with  
prospects of transfer to the Permanent Establish-  
ment.

Candidates must be Associates of the Royal In-  
stitute of British Architects or hold an equivalent  
qualification. Preference will be given to those  
having a general knowledge and experience of  
Architectural work in the service of a Local  
Authority.

**2. ARCHITECTURAL ASSISTANT, Grade  
A.P.T. V.** The appointment will be on the Perma-  
nent Establishment. Candidates must be Associates  
of the Royal Institute of British Architects or hold  
an equivalent qualification and preferably have a  
general knowledge and experience of architectural  
work in the service of a local authority.

**3. ARCHITECTURAL ASSISTANT, Grade  
A.P.T. III.** The appointment will be on the Perma-  
nent Establishment. Candidates must have  
served Articles of Apprenticeship or have worked in an  
architectural office for a minimum period of three  
years and have passed the Intermediate Exami-  
nation of the Royal Institute of British Architects  
or its equivalent at one of the recognised schools of  
architecture.

These three appointments will be terminable by  
one month's notice on either side and are sub-  
ject to the provisions of the Local Government  
Superannuation Act, 1937, and the successful can-  
didates will be required to pass a medical examina-  
tion.

Applications, stating age, qualifications and  
experience, accompanied by copies of not more  
than three testimonials, should be addressed to the  
undersigned, "Architectural Staff," not  
later than 10 a.m. on Monday, 10th July, 1951.

It will be necessary for the successful candidates  
to provide their own housing accommodation, as  
the Council is not in a position to assist.

Canvassing, directly or indirectly, will be deemed  
a disqualification.

(Signed) R. S. FORSTER, Town Clerk.

Town Hall, Dyne Road, Kilburn, N.W.6.

18th June, 1951. [5554]

## WEST SUSSEX COUNTY COUNCIL.

### COUNTY ARCHITECT'S DEPARTMENT.

**APPLICATIONS** are invited for the following ap-  
pointments at salaries in accordance with the  
National Scales of Salaries:—

(a) **SENIOR ASSISTANT ARCHITECT, Grade  
VIII, A.P.T. Division (£735 to £810 per  
annum).**

(b) **SENIOR ASSISTANT ARCHITECT, Grade  
VI, A.P.T. Division (£645 to £710 per annum).**

(c) **ASSISTANT MAINTENANCE INSPECTOR-  
ENGINEER, Grade III, A.P.T. Division (£500  
to £545 per annum).**

Further particulars should be obtained from the  
County Architect, County Hall, Chichester, to  
whom detailed applications must be submitted not  
later than Tuesday, 17th July, 1951.

T. C. HAYWARD, Clerk of the County Council.

County Hall, Chichester.

19th June, 1951. [5556]

## METROPOLITAN BOROUGH OF LEWISHAM.

### APPOINTMENT OF ASSISTANT ARCHITECTS.

**APPLICATIONS** are invited for the appointment  
in the Borough Architect's Department of (a)  
a **SENIOR ASSISTANT ARCHITECT, Salary Scale  
A.P.T. Division, Grade VIII (£735 to £810 per  
annum);** and (b) an **ASSISTANT ARCHITECT,  
Salary Scale A.P.T. Division, Grade IV (£530 to  
£575 per annum);** or Grade V (£570 rising to  
£620 per annum) according to the qualifications of  
the successful candidate. London "Weighting"  
varying between £10 and £30 per annum according  
to age is applicable to each salary.

Applicants for (a) must possess an approved  
University degree in architecture, or be Associates  
of the Royal Institute of British Architects with  
at least eight years' experience (excluding the period  
spent in theoretical training) or possess a University  
degree in architecture in addition to being Associates  
of the Royal Institute of British Architects, with  
at least seven years' experience (excluding the period  
spent in theoretical training).

Applicants for (b) should have passed the  
R.I.B.A. Intermediate Examination, or its equivalent  
at one of the recognised Schools of Architecture,  
and have had at least two years' practical ex-  
perience, or be a Registered Architect.

Preference will be given to candidates with wide  
housing experience including the design and con-  
struction of multi-storey flats.  
The appointments will be subject to the Rules  
and Regulations of the Council from time to time  
in force relating to Officers; to the National Scheme  
of Conditions of Service; to the provisions of the  
Local Government Superannuation Act, 1937; to ter-  
mination by one month's notice on either side and  
to the successful candidate passing satisfactorily a  
medical examination by the Council's Medical Officer  
of Health.

Forms of application may be obtained from the  
undersigned, to whom they should be returned  
accompanied by copies of not more than three re-  
cent testimonials, in an envelope endorsed with  
the name of the post applied for so as to be re-  
ceived not later than Saturday, the 14th July, 1951.  
Canvassing either directly or indirectly will be  
a disqualification.

ALAN MILNER SMITH, Town Clerk.  
Lewisham Town Hall, Catford, S.E.6.

19th June, 1951. [5555]

## CITY OF BRADFORD.

### CITY ARCHITECT'S DEPARTMENT.

**APPLICATIONS** are invited for the following per-  
manent posts and one temporary post in the  
Office of the City Architect (W. C. Brown,  
I.C.A.R., A.R.I.B.A., A.M.T.P.I.).

The Department is responsible for the work of  
all Committees with the exception of Housing.

**QUANTITY SURVEYOR (Grade VII, £685/760  
per annum).**

Preference will be given to members of the  
Royal Institution of Chartered Surveyors who have  
qualified in the Quantities Section and have had  
experience in taking off quantities in accordance with  
the "Standard Method of Measurement."

**2 ASSISTANT ARCHITECTS (Grade V, £570/620  
per annum).**

Applicants should be Corporate Members of the  
R.I.B.A. or have obtained a Degree or Diploma in  
Architecture at one of the recognised Schools.  
**CLERK OF WORKS (Heating and Ventilating)  
(Grade III, £500/545 per annum).**

Candidates must be experienced in heating, ven-  
tilating and plumbing work. They should have  
obtained the full technological certificate of the City  
and Guilds of London Institute or other recognised  
examination, but applications from others who have  
had good experience will also be carefully con-  
sidered.

**TEMPORARY CLERK OF WORKS (Grade III,  
£500/545 per annum).**

It is expected that the appointment will last for  
a minimum period of 3 years. Preference will be  
given to candidates who have obtained the full tech-  
nological certificate of the City and Guilds of  
London Institute or other recognised examination,  
but applications from others who have had good  
experience will also be carefully considered.

The appointments will be subject to the provi-  
sions of the Local Government Superannuation Act,  
1937, and the successful applicant will be required  
to pass a medical examination.

No assistance can be given in the provision of  
housing accommodation.

Application forms may be obtained from the City  
Architect, Town Hall, Bradford, and the completed  
form, together with two recent testimonials, must  
be returned to me not later than Saturday, the 14th  
July, 1951.

W. H. LEATHEM, Town Clerk.

Town Hall, Bradford.

21st June, 1951. [5561]

CITY AND COUNTY OF NEWCASTLE  
UPON TYNE.

## CITY ARCHITECT'S DEPARTMENT.

THE City Architect will be pleased to hear from Architects possessing a contemporary outlook and considerable aptitude in matters of architectural design and construction, who are keen to participate in the development of a large programme of normal housing and extensive schemes involving multi-storey flats.

Vacancies exist on the establishment for Associate Members of the R.I.B.A., on Grades A.P.T. V, VI, VII, VIII and IX, and for Student Members of the R.I.B.A., on Grades A.P.T. III and IV.

The appointments will be subject to the National Conditions of Service as adopted by the City Council, to the provisions of the Local Government Superannuation Act, 1937, and to one month's notice on either side. Successful candidate will be required to pass a medical examination.

Applicants may state a preference (if any) for work on "normal housing" or "multi-storey flats." They should give the following information: (1) grade applied for; (2) age; (3) particulars of training; (4) qualifications; (5) experience; (6) present appointment; (7) past appointments; (8) copies of two recent testimonials or names and addresses of two persons to whom reference may be made.

Applications should be addressed to George Kenyon, A.R.I.B.A., A.M.T.P.I., City Architect, 16 Cloth Market, Newcastle upon Tyne 1, not later than 21st July, 1951.

JOHN ATKINSON, Town Clerk.  
Town Hall, Newcastle upon Tyne 1. [5563]  
22nd June, 1951.

## LONDON ELECTRICITY BOARD.

## ASSISTANT QUANTITY SURVEYORS.

APPLICATIONS are invited for the above positions in the Construction Branch of the Chief Engineer's Department at Lesco House, Stamford Street, S.E.1.

Applicants should be experienced in the preparation of Bills of Quantities in all their stages, measurement of Variations and re-measurement of Contracts, and will work under the direction of a Chartered Quantity Surveyor.

The posts have been graded under the National Joint Board agreement of the 17th February, 1950, as Grade 5 (Schedule C2)—salary range: £607 10s. 0d. to £814 16s. 0d. per annum inclusive, the commencing salary being dependent upon qualifications and experience. This grading is subject to the approval of the District Joint Board and confirmation by the National Joint Board.

Application forms, obtainable from Establishments Officer, 46 New Broad St., E.C.2, to be returned duly completed within 18 days from the appearance of this advertisement. Please enclose addressed foolscap envelope and quote ref. EST/V/1216/AA on envelope and all correspondence. [5557]

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. SENIOR PRINCIPAL SCIENTIFIC OFFICER. The Civil Service Commissioners invite applications for a vacancy for a Senior Principal Scientific Officer in the Building Operations Research Unit of the Building Research Station. The officer appointed will, for the present, be stationed in South Kensington, but it is expected that the Unit will eventually be transferred to the headquarters of the Building Research Station at Ganton, near Watford, Herts.

The successful candidate will be expected to direct and take charge of staff engaged on the study of productivity and costs of building. This will include the application of research methods to the study of building processes and to site and factory operations.

All candidates must have been born on or before 1st August, 1916, and have a 1st or 2nd Class Honours degree in some branch of science or engineering or an equivalent qualification. Good experience in research is essential. Experience of operational research is a distinct advantage, although a lack of experience would not preclude the appointment of an otherwise suitable candidate. Knowledge of statistical methods is an advantage.

Inclusive salary scale (London) £1,500 x £75 = £1,750 (min.) to £1,500 x £75 = £2,000 (max.). Exceptionally a starting salary above the minimum may be granted according to qualifications and experience.

The post is superannuable under the Federated Superannuation System for Universities.

Further particulars and application forms from the Civil Service Commission, Scientific Branch, Trinidad House, Old Burlington Street, London, W.1, quoting S4047/51. Completed application forms must be returned by 2nd August, 1951. [5560]

## MIDLANDS ELECTRICITY BOARD.

## NORTH STAFFORDSHIRE SUB-AREA.

## APPOINTMENT OF ARCHITECTURAL ASSISTANT.

APPLICATIONS are invited for the above position at the Sub-Area Headquarters, 31 Kingsway, Stoke-on-Trent.

Applicants should have received a recognised architectural training, and should be experienced in the design and construction of industrial and commercial type building.

The commencing salary at the rate of £550 per annum will be provisional, and subject to negotiation with such organisation as may be appropriate.

Applications, giving full details of age, experience and qualifications, should be forwarded within fourteen days, to Mr. H. A. P. Caddell, Sub-Area Manager, Midlands Electricity Board, 31 Kingsway, Stoke-on-Trent.

A. STEPHENS, Secretary. [5569]  
June 5th, 1951.

## THE WEST OF SCOTLAND AGRICULTURAL COLLEGE.

## FARM BUILDINGS ADVISORY SERVICE.

THE Governors invite applications for the post of JUNIOR ASSISTANT in the Farm Buildings Advisory Service of the College. Applications are invited from candidates with either Architectural, Quantity Surveying, or good general Building Trade training and with experience in preparing drawings.

Salary Scale Grade B (Intermediate), £265 x £20 (approx.) - £458, with entry one increment above the minimum for each year of age over 21 up to age 25.

Conditions of appointment and application forms are obtainable from the undersigned, with whom applications should be lodged not later than 16th July, 1951.

M. B. BAIN, Secretary. [5566]  
6 Blythwood Square, Glasgow, C.2.

## THE UNIVERSITY OF MANCHESTER.

APPLICATIONS are invited for the following posts:—

ONE ASSISTANT LECTURER IN ARCHITECTURE and

ONE ASSISTANT LECTURER IN TOWN AND COUNTRY PLANNING.

Salary Scale £450 x III - 500. Membership of F.S.S.U. and Children's Allowance Scheme. Applications to be submitted not later than July 21st, 1951, to the Registrars, The University, Manchester, 13, from whom further particulars and application forms may be obtained. [5564]

ARCHITECTURAL APPOINTMENTS  
VACANT

ARCHITECTURAL Assistants required, Capable of working up to Intermediate standard R.I.B.A. Permanent and well paid positions will be offered to experienced men.—Write fully to Chief Staff Architect, Iford Limited, Romford, Essex. [5536]

SENIOR and Junior Assistants required for interesting new work. Good salaries in accordance with qualifications.—J. Brian Cooper, F.R.I.B.A., 177 Corporation Street, Birmingham, 4. [5551]

## SITUATIONS VACANT

BUILDING Surveyor required for large industrial concerns within 30 miles' radius of London. Must be capable of supervision of maintenance repairs to buildings, machine foundations, drainage and general advice on all types of buildings. Selected candidate will be responsible to the Plant Manager and be his adviser on all questions relating to building matters and must also be capable of handling labour in a supervisory capacity. Good salary to the right applicant. Applicants should state in confidence, qualifications and experience in chronological order, also indicating salary expected. Age between 30-45.—Applications to Box 2485, The Architect and Building News. [5562]

A PERMANENT post is offered to an active Structural Engineer as Services Inspector. Considerable experience in responsible supervising capacity in the erection of reinforced concrete structures with some design experience is required. Prepared to travel extensively in the British Isles, but must be resident in the London Area. Attributes required are agreeable personality, sound judgement on erection problems, and able to write concise factual reports. Salary £600 with expenses.—Write, giving full details, to Box A.N.119, at 191 Gresham House, E.C.2. [5545]

QUALIFIED and/or experienced Architectural Draughtsman required for large practice. Pleasant 2 bed-room flat available.—R. & D. Hall, F.A.R.I.B.A., Masonic Buildings, Bangor, N. Wales. [5559]

## SITUATIONS WANTED

YOUNG, experienced Austrian architect of varied talents, fine drafter and designer for all planning works, details and perspective representations, with mood adaptability, knowing English, looks for employment, preferably in South Africa.—Letters to be addressed to: Franz Mullner, 132 Buchenasse, Vienna, 10th, Austria. [5568]

REGD. Architect desires responsible remuneration senior staff appointment. London or Home Counties. 30 years' commercial and industrial experience. Specialised knowledge of dairy trade.—Box 2537, The Architect and Building News. [5565]

## CONTRACTS

## MERIDEN RURAL DISTRICT COUNCIL.

## PARISH OF BALSALL.

## ERECTION OF 64 HOUSES.

TENDERS are invited for the erection of 64 TRADITIONAL TYPE HOUSES on land in Needlers End Lane, Balsall.

Plans and Specifications may be inspected at the office of Mr. P. B. Herbert, Chartered Architect, Grosvenor Buildings, Steelhouse Lane, Birmingham, 4, and the Bills of Quantities and Form of Tender may be obtained from the same address upon payment of a deposit of two guineas, which will be refunded upon receipt of a bona-fide tender, not subsequently withdrawn, and return of all documents.

Sealed tenders endorsed "Erection of 64 houses, Balsall," must be delivered to the undersigned not later than 12 noon on Wednesday, the 25th July, 1951. The Council do not bind themselves to accept the lowest or any tender.

S. F. WOODHAMS, Clerk of the Council.  
Old Bank House, Colehill, Birmingham.  
19th June, 1951. [5552]

## NOTTINGHAM AND DISTRICT TECHNICAL COLLEGE.

THE Joint Education Committee require Contractors' tenders for their main new building on or about the 1st November, 1951.

The building is a LIGHT STEEL FRAMED STRUCTURE, some ten storeys high, at an estimated cost of approximately £500,000.

The Committee will select a short list of tenders of equal standing, and those who wish to be considered should submit applications to me not later than the 31st August, 1951.

Applicants must state their recent work of this character, and give some indication that their organisation is capable of dealing with this problem at the present time.

The Architects for the scheme are Cecil Howitt & Partners, Nottingham.

F. STEPHENSON,  
Clerk to the Joint Education Committee.  
Education Office,  
South Parade, Nottingham. [5558]

## FOR SALE

ALL Mouldings, Plans and Embossed, and Embossed Ornaments. Numerous designs.—Dare's Moulding Mills Ltd., 60 Fowall Road, Dalton, E.S. [5086]

FOR Sale. Five only, practically new Portable Diesel Engine Driven Two-Stage Air Cooled Air Compressor by Chicago Pneumatic Tool Co. Ltd., having a capacity of 500 cubic feet of free air actually delivered per min. against 100-lb. p.s.i. pressure; with cylinders 8½-in. dia. low pressure and 4½-in. dia. high pressure x 5-in. stroke, driven through clutch by Caterpillar Vertical Six-Cylinder Radiator Cooled Diesel Engine, speed 1,000 r.p.m., complete with automatic unloader, air receiver, radiator, intercooler, fuel tank, all mounted on steel chassis with sheet steel canopy, side shutters, road wheels and tow bar. The above compressors are packed in their original cases as supplied by the manufacturers, and are for all practical purposes equal to new.—Thos. W. Ward Limited, Albion Works, Sheffield. [5544]

NISSEN Type Huts, ex-Government stock, reconditioned, ready for erection. Sizes 12ft. multiples: 36ft. x 16ft., £80 and £60; 24ft. x 16ft., £56 and £42; 72ft. x 16ft., £150 and £109. Plasterboard Huts and other buildings.—Write, call or telephone, Universal Supplies (Belvedere) Ltd., Dept. 32, Crabtree Manorway, Belvedere, Kent. Telephone ERITH 2048. [50109]

Two useful books for readers of "THE ARCHITECT & Building News"

## DOMESTIC WATER HEATING

Basic Engineering Principles of  
Electric and Solid-Fuel Installations

By **RONALD GRIERSON,**  
M.I.E.E., M.I.Mech.E.

**B**ESIDES setting out the principles of the subject, this book gives a critical analysis of the current practice in the supply of hot water for domestic purposes. The increasing cost of, and enormous demand for, new housing have made the time opportune for such an investigation.

The author deals mainly with the combination of an electric immersion heater and thermostat with a conventional hot-water storage tank, in conjunction with a coal or coke-fired domestic water heater, this being arranged either as a "back-boiler" or as an independent unit.

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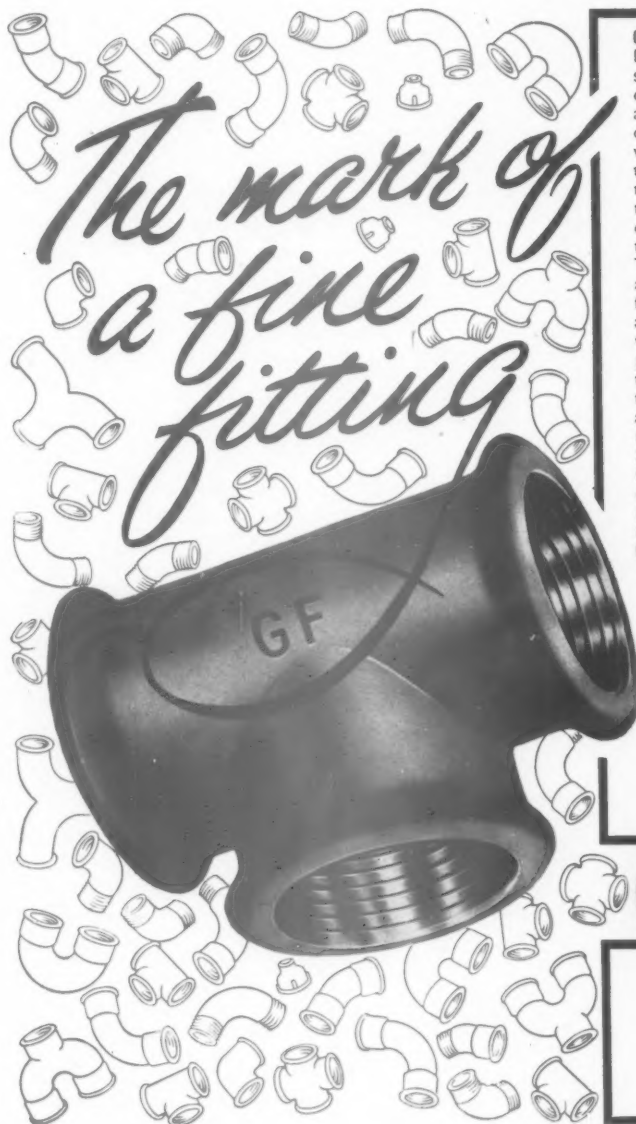
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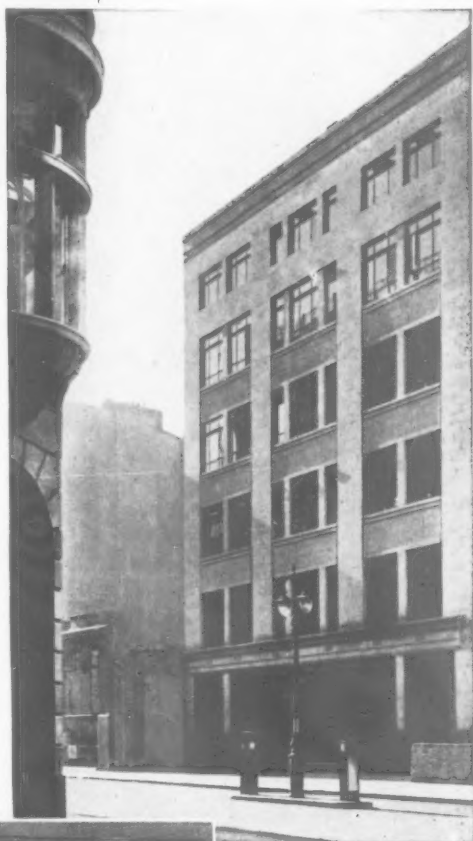
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Details of the System are given in  
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